FAIRCHILD
SEMICONDUCTOR®

the power franchise™

Fairchild Semiconductor Product Catalog

Rev. 1

Analog & Mixed Signal

Discrete Power

Interface & Logic

Microcontrollers

Optoelectronics

RF Power

Company Information

Fairchild Semiconductor is the leading global supplier of high performance products that optimize power. Our power semiconductor solutions address the world's growing power requirements driven by an increased demand for higher performance and more efficient electronics. We offer the broadest portfolio of products that reduce power consumption while enabling longer battery life and reduced size and weight.

Fairchild is The Power Franchise®, supplying power semiconductors to the consumer, industrial, ultra-portable, communications, and automotive market segments. Fairchild provides the Global Power Resource™—a complete power design source that includes Power Systems Laboratories located worldwide, technical expertise, and online resources that address designers' specific application needs.

Analog & Mixed Signal products include Power Management, Analog Signal Processing and Data Conversion ICs. Fairchild is driving continued innovation and portfolio expansion in product areas ranging from Off-Line Switchers, DC/DC converters, PFC and PWM controllers, Battery Management, Data Converters (A/D and D/A) and Video ICs to LDOs, System management & Supervision, LCD back light drive ICs, Electronic ballast ICs, Motor ICs and Amplifiers. Fairchild also offers Microcontrollers and Application Specific Standard Products (ASSP).

Fairchild's **Discrete Power** portfolio is one of the industry's broadest, and includes leading edge SuperFET™, UltraFET®, PowerTrench® and QFET® MOSFETs, Bipolar Transistors, IGBTs, Schottky, Ultrafast, HyperFast and Stealth™ Diode, and SPM™ (Smart Power Module). Fairchild's extensive discrete packaging includes advanced small package solutions with the advantages of superior size, low package height, and excellent thermal and electrical performance.

Interface & Logic products include LVDS, GTLP, Universal Serial Bus, DIMM and 1284 standard products. Interface & Logic is also comprised of logic level translator products, TinyLogic® products, low voltage products, analog switches, bus switches and standard logic products. Fairchild's packaging solutions range from space saving MicroPak™ and DQFN packaging, to high pin count QVSOP and BGA packaging.

Optoelectronic products include optocouplers, Solid State Relays, LED lamps and displays, and infrared components. Fairchild's portfolio of industry standard and application specific devices features a variety of advanced solutions including a full-color spectrum of low power and high brightness SMD LEDs, infrared variable sensing, mini-flat packages, surface-mount LEDs and infrared, Solid State Relays and isolated error amplifiers. A complete set of safety approval certifications are available for optocoupler products.

RF products provides RF power amplifier solutions for wireless communication systems like Wi-Fi™, CDMA and WCDMA cellular handsets. RF packaging solutions include advanced small package options with a small footprint, low package profile and superior thermal and electrical performance.

Fairchild employs 9,000 people worldwide and is headquartered in South Portland, Maine. Additional U.S. design and manufacturing facilities are located in California, Pennsylvania, Colorado and Utah with manufacturing, assembly and test sites in Malaysia, Singapore, the Philippines, China and South Korea.

FAIRCHILD SEMICONDUCTOR®

the power franchise™

The Power Franchise®

Power

AC/DC Conversion
- Battery Charger Support
- Diodes
- Fairchild Power Switches
- IGBTs
- MOSFETs
- Optically Isolated Error Amplifiers
- Optocouplers
- PFC/PWM Combinations
- Power Factor Correction
- PWM and Phase Modulation Controllers
- Rectifiers
- Voltage References

Battery Management
- Microcontrollers
- Battery Chargers
- Diodes
- MOSFETs
- Optically Isolated Error Amplifiers
- Optocouplers
- Rectifiers
- Temperature Sensors

DC/DC Conversion
- DC Boost Converters
- DC/DC Conversion ICs
- Diodes
- Linear Regulators
- MOSFETs
- Optically Isolated Error Amplifiers
- Optocouplers
- Rectifiers

Monitoring/Supervisory
- Microcontrollers
- Supervisory Circuits
- Temperature Sensors
- Voltage Detectors

Other Power Applications
- Ballast Controllers
- Ground Fault Interrupt
- IGBTs
- MOSFETs
- Motor Drivers/Controllers
- Multiplexer/Register for Microprocessor VID
- Solid State Relays
- Supervisory ICs
- Transistors
- TRIAC Optocouplers

Input

Analog Input and Processing
- ADCs
- Amplifiers
- Analog Switches
- Comparators
- Multipliers
- Optocouplers
- Timers
- Video Processors
- Voltage References
- Voltage to Frequency Converters

Interface
- 1284 Transceivers
- Advanced Logic
- Bus Switches
- GTLP
- Low Voltage Logic
- LVDS
- Memory Module Drivers
- Optocouplers
- USB Transceivers

Optical
- Infrared Products
- Solid State Relays

Processors

- Microcontroller

Logic

- Bus Switches
- Low Voltage Logic
- Standard Logic
- TinyLogic®

Output

Analog
- Amplifiers
- Analog Switches
- Comparators
- DACs
- Encoders
- Optocouplers
- Power Amplifiers
- Video Filters/Drivers

Interface
- 1284 Transceivers
- Advanced Logic
- Bus Switches
- GTLP
- Low Voltage Logic
- LVDS
- Memory Module Drivers
- Optocouplers
- USB Transceivers

Optical
- Infrared Products
- LED Displays
- LED Drivers
- LED Lamps
- Solid State Relays

RF
- Power Amplifiers

Support

Discrete
- Diodes
- JFETs
- MOSFETs
- Rectifiers
- Transistors

Sensing
- Infrared Products
- Optocouplers
- Temperature Sensors

Feedback & Control
- Infrared Products
- Optocouplers
- Solid State Relays

Fairchild Semiconductor's Product Tree

Analog & Mixed Signal

Analog Signal Processing
- Amplifiers
- Comparators
- Power Amplifiers
- Voltage to Frequency Converters

Application Specific ICs
- Ballast ICs
- CCFL Backlight ICs
- Ground Fault Interrupt ICs
- Motor ICs
- Multiplexer/Register for Microprocessor VID

Data Conversion
- Analog to Digital Converters (ADCs)
- Digital to Analog Converters (DACs)

Interface and Switches
- DIMM
- GTLP
- IEEE1284
- LVDS
- USB
- Switches

Power Management
- LED Drivers
- Linear Regulators
- AC/DC Conversion ICs
- DC/DC Conversion ICs
- PWM and Phase Modulation Controllers (AC/DC and DC/DC)
- Supervisory Circuits
- Voltage References and Shunts

Special Function ICs
- Landing Correction ICs
- Vertical Output ICs
- Voltage Stabilizers

Thermal Management
- Temperature Sensors

Timing Circuits
- Temperature Sensors

Video ICs
- Analog Filters and Buffers
- Decoder and Genlocks
- Digital Video Filters and Mixers
- Digital Video Memories
- Digital Video Processors
- Encoders
- Video Demo Boards

Discrete Power

Bipolar Power Transistors & JFETs

Diodes & Rectifiers

IGBTs
- Discrete IGBT
- Ignition IGBT
- IGBT Modules
- SPM™ (Smart Power Module)

MOSFETs
- Load Switches
- Power MOSFETs
- MOSFET/Schottky Combos

TRIACs

Interface & Logic

Interface
- DIMM
- GTLP
- IEEE1284
- LVDS
- USB

Logic
- Low Voltage Logic
- Standard Logic
- TinyLogic®

Switches
- Analog Switches
- Bus Switches

Microcontrollers

Optoelectronics

Infrared Products

LED Lamps & Displays

Optocouplers

Solid State Relays

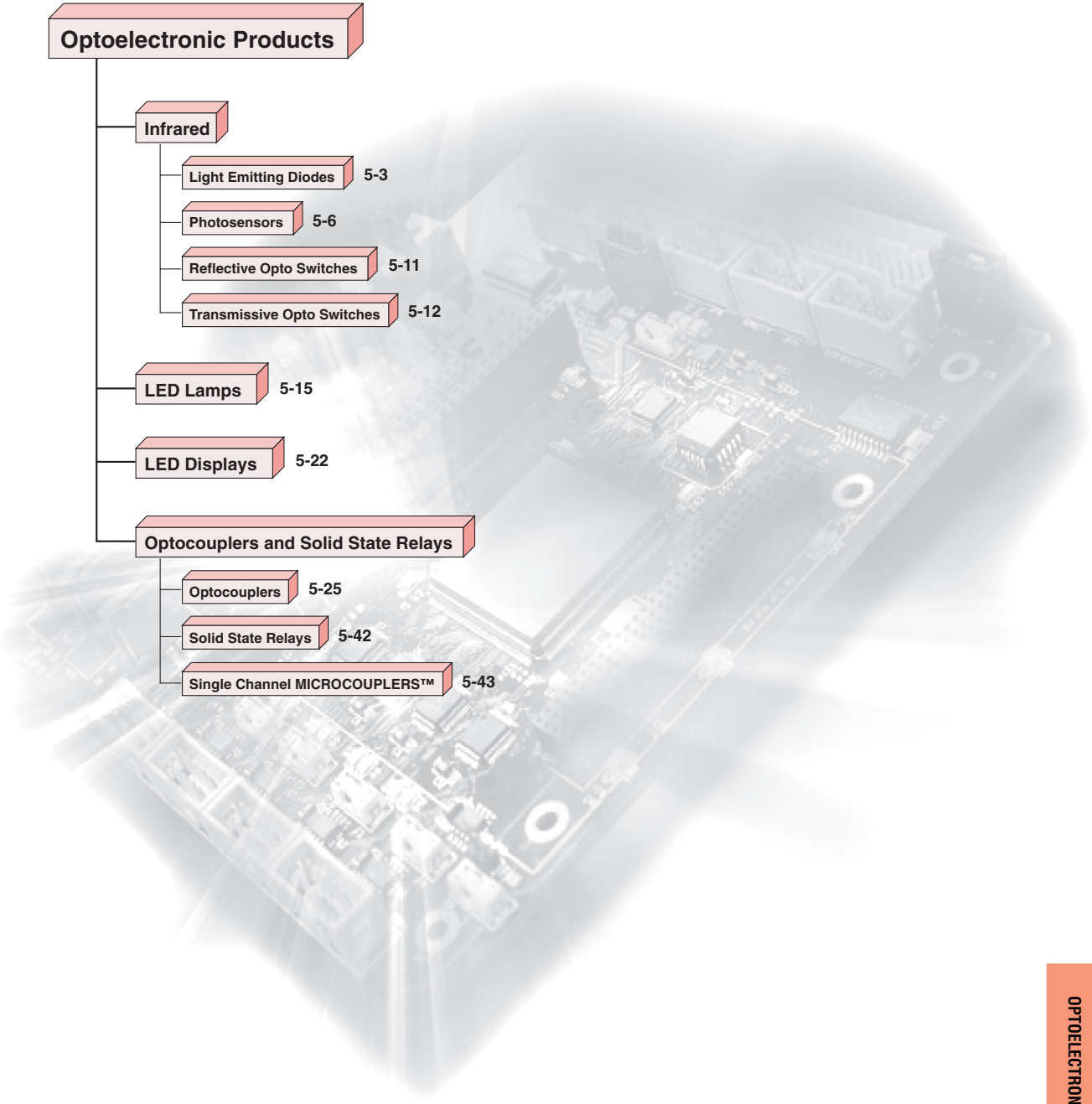
RF Power

Basestation

Cellular Handsets

Millimeter Wave/Wideband

Wireless LAN



Optoelectronic Products

Light Emitting Diodes (LED), Plastic Package

Products	Ie (mW/sr) @ I_F = 100 mA		Max V_F (V) @ I_F = 100 mA	Max I_R (µA) @ V_R = 5V	Emission Angle in Degrees (°) @ $^1/_2$ Intensity	Wavelength λp (nm)
	Min	Max				
T-1 (3 mm) LED Package						
QEC112	6	30	1.7	10	24	940
QEC113	14	–	1.7	10	24	940
QEC121	14	–	1.9	10	16	880
QEC122	27	80	1.9	10	16	880
QEC123	39	–	1.9	10	16	880
T-1$^3/_4$ (5 mm) LED Package						
QED233	10	50	1.6	10	40	940
QED234	27	–	1.6	10	40	940
QED633	15	–	1.6	10	55	940
QED634	20	–	1.6	10	55	940
QED121	16	40	1.9	10	18	880
QED122	32	100	1.9	10	18	880
QED123	50	–	1.9	10	18	880
QED123UL[1]	50	–	1.9	10	18	880
QED221	10	20	1.9	10	40	880
QED222	16	32	1.9	10	40	880
QED223	25	–	1.9	10	40	880
TO-46 (Plastic) LED Package						
QED522	20	80	1.9	10	20	880
QED523	40	–	1.9	10	20	880
Sidelooker LED Package						
QEE113	3	12	1.7	10	50	940
QEE122	4	16	1.9	10	50	880
QEE123	8	–	1.9	10	50	880
Thin Sidelooker LED Package						
QEE213	2	–	1.7	10	50	940

[1]UL217 Certified (File No. S8600)

Light Emitting Diodes (LED), Surface Mount Package

Products	Ie (mW/sr) @ I_F = 100 mA		Max V_F (V) @ I_F = 100 mA	Max I_R (µA) @ V_R = 5V	Emission Angle in Degrees (°) @ $^1/_2$ Intensity	Wavelength λp (nm)
	Min	Max				
T-$^3/_4$ (2 mm) LED Package						
QEB363	8	–	1.7	100	24	940
QEB373	16	–	1.9	100	24	880

Products	Ie (mW/sr) @ I_F = 100 mA		Max V_F (V) @ I_F = 100 mA		Max I_R (µA) @ V_R = 5V	Emission Angle in Degrees (°) @ $^1/_2$ Intensity	Wavelength λp (nm)
	Min	Max	Typ	Max			
PLCC-2 LED Package							
QEB421	4	8	1.5	1.8	1.0	120	880
QEB441	2	6	2.1	–	10.0	120	730

Light Emitting Diodes (LED), Hermetic Packages

Products	P_O (mW) @ I_F = 100 mA		Max V_F (V) @ I_F = 100 mA	Max I_R (µA) @ V_R = 5V	Emission Angle in Degrees (°) @ $^1/_2$ Intensity	Wavelength λp (nm)
	Min	Max				
TO-46 LED Package (Convex Lens)						
1N6264	6.00	–	1.7	10	16	940
LED55B	3.50	–	1.7	10	16	940
LED55C	5.40	–	1.7	10	16	940
LED56	1.50	–	1.7	10	16	940
F5D1	12.00	–	1.8	10	16	880
F5D2	9.00	–	1.8	10	16	880
F5D3	10.50	–	1.8	10	16	880
TO-46 LED Package (Flat Lens)						
1N6265	6.00	–	1.7	10	80	940
CQX15	5.40	–	1.7	10	80	940
LED55BF	3.50	–	1.7	10	80	940
LED55CF	5.40	–	1.7	10	80	940
LED56F	1.50	–	1.7	10	80	940
F5E1	12.00	–	1.8	10	80	880
F5E2	9.00	–	1.8	10	80	880
F5E3	10.50	–	1.8	10	80	880

Photosensors — Plastic Packages, Analog Output

Products	Test Conditions			$I_{C(ON)}$ (mA)		BV_{CEO} (V) Max	Max I_{CEO} (nA) @ V_{CE} = 10V	Sensor Type
	V_{CE} (V)	E_e (mW/cm^2)	λp (nm)	Min	Max			
T-1 (3 mm) Detector Package								
QSC112	5	0.5	880 AlGaAs	1.00	4.00	30	100	Phototransistor
QSC113	5	0.5	880 AlGaAs	2.40	9.60	30	100	Phototransistor
QSC114	5	0.5	880 AlGaAs	4.00	–	30	100	Phototransistor
T-1 3/4 (5 mm) Detector Package								
QSD122	5	0.5	880 AlGaAs	1.00	6.00	30	100	Phototransistor
QSD123	5	0.5	880 AlGaAs	4.00	16.00	30	100	Phototransistor
QSD124	5	0.5	880 AlGaAs	6.00	–	30	100	Phototransistor
TO-18 Detector (Plastic) Package								
QSD722	5	0.5	880 AlGaAs	0.60	3.80	30	100	Phototransistor
QSD723	5	0.5	880 AlGaAs	2.50	10.00	30	100	Phototransistor
QSD724	5	0.5	880 AlGaAs	3.50	–	30	100	Phototransistor
QSD733	5	0.25	880 AlGaAs	10.00	–	30	100	Photodarlington
Sidelooker Detector Package								
QSE113	5	0.5	880 AlGaAs	0.25	1.50	30	100	Phototransistor
QSE114	5	0.5	880 AlGaAs	1.00	–	30	100	Phototransistor
QSE122	5	0.5	880 AlGaAs	3.00	12.00	30	100	Phototransistor
QSE133	5	0.25	880 AlGaAs	9.00	–	30	100	Photodarlington

Products	Test Conditions			$I_{C(ON)}$ (mA)		BV_{CEO} (V) Max	Max I_{CEO} (nA) @ V_{CE} = 25V	Sensor Type
	V_{CE} (V)	E_e (mW/cm^2)	λp (nm)	Min	Max			
Thin Sidelooker Detector Package								
QSE213	5	0.5	950 GaAs	0.2	1.50	30	100	Phototransistor
QSE214	5	0.5	950 GaAs	1.0	–	30	100	Phototransistor

Products	Test Conditions			I_L (μA)		Max I_{RD} (nA) @ V_R = 10V	Radiant Sensitive Area (mm^2)	Sensor Type
	V_R (V)	E_e (mW/cm^2)	λp (nm)	Min	Max			
Sidelooker Detector Package (No Lens)								
QSE773	5	1.0	940 GaAs	30.0	–	30	2.71 x 2.71	Photodiode
TO-92 Detector Package								
QSE973	5	1.0	940 GaAs	30.0	–	30	2.71 x 2.71	Photodiode

Photosensors — Plastic Packages, Analog Output (Continued)

Products	Test Conditions			I_L (µA)		Max I_{RD} (nA) @ V_R = 20V	Radiant Sensitive Area (mm^2)	Sensor Type
	V_R (V)	E_e (mW/cm^2)	λp (nm)	Min	Max			
T-1 3/4 (5 mm) Diode Package								
QSD2030	5	0.5	950 GaAs	15.0	—	5	1.0 x 1.0	Photodiode

Photosensors — Plastic Packages, OPTOLOGIC® Output

Products	Test Conditions λp (nm)	E_E+ (mW/cm^2) Max	E_E+/E_E- Typ	V_{OL} (V) Max	I_{CC} (mA) Max	Sensor Type
Sidelooker OPTOLOGIC® Package						
QSE156	880 AlGaAs	0.250	1.2	0.40	5	Buffer Totem Pole
QSE157	880 AlGaAs	0.250	1.2	0.40	5	Inverter Totem Pole
QSE158	880 AlGaAs	0.250	1.2	0.40	5	Buffer Open Collector
QSE159	880 AlGaAs	0.250	1.2	0.40	5	Inverter Open Collector

Photosensors — Plastic Surface Mount Packages

Products	Test Conditions			$I_{C(ON)}$ (mA)		BV_{CEO} (V) Max	Max I_{CEO} (nA) @ V_{CE} = 10V	Sensor Type
	V_{CE} (V)	E_e (mW/cm^2)	λp (nm)	Min	Max			
T-$^3/_4$ (2 mm) Detector Package								
QSB363	5	0.5	880 AlGaAs	0.7	–	30	100	Phototransistor

Products	Test Conditions			$I_{C(ON)}$ (mA)		BV_{CEO} (V) Max	Max I_{CEO} (nA) @ V_{CE} = 25V	Sensor Type
	V_{CE} (V)	E_e (mW/cm^2)	λp (nm)	Min	Max			
PLCC-2 Detector Package								
QSB320	5	0.1	880 AlGaAs	16	–	30	200	Phototransistor

Products	Test Conditions			$I_{C(ON)}$ (mA)		BV_{CEO} (V) Max	Max I_{CEO} (nA) @ V_{CE} = 25V	Sensor Type
	V_{CE} (V)	E_e (mW/cm^2)	λp (nm)	Min	Max			
Formed Lead Package								
QSB34	5	1.0	940 GaAs	25	–	30	9	Pin Photodiode

Photosensors — Hermetic Package

Products	Test Conditions			$I_{C(ON)}$ (mA)		BV_{CEO} (V) Max	Max I_{CEO} (nA) @ V_{CE} = 10V	Sensor Type
	V_{CE} (V)	E_e (mW/cm^2)	λp (nm)	Min	Max			
TO-18 Detector Package (Convex Lens)								
BPW36	5	0.5	940 GaAs	1.00	–	30	100	Phototransistor
L14G1	5	0.5	940 GaAs	1.00	–	30	100	Phototransistor
L14G2	5	0.5	940 GaAs	0.50	–	30	100	Phototransistor
L14G3	5	0.5	940 GaAs	2.00	–	30	100	Phototransistor
L14P1	5	0.5	940 GaAs	6.50	–	30	100	Phototransistor
L14P2	5	0.5	940 GaAs	13.0	–	30	100	Phototransistor

Products	Test Conditions			$I_{C(ON)}$ (mA)		BV_{CEO} (V) Max	Max I_{CEO} (nA) @ V_{CE} = 12V	Sensor Type
	V_{CE} (V)	E_e (mW/cm^2)	λp (nm)	Min	Max			
BPW38	5	0.05	940 GaAs	3.00	–	25	100	Photodarlington
L14F1	5	0.05	940 GaAs	3.00	–	25	100	Photodarlington
L14F2	5	0.05	940 GaAs	1.00	–	25	100	Photodarlington

Products	Test Conditions			$I_{C(ON)}$ (mA)		BV_{CEO} (V) Max	Max I_{CEO} (nA) @ V_{CE} = 20V	Sensor Type
	V_{CE} (V)	E_e (mW/cm^2)	λp (nm)	Min	Max			
TO-18 Detector Package (Flat Lens)								
L14C1	5	0.5	940 GaAs	0.16	–	30	100	Phototransistor
L14C2	5	0.5	940 GaAs	0.08	–	30	100	Phototransistor
L14N1	5	0.5	940 GaAs	1.00	–	30	100	Phototransistor
L14N2	5	0.5	940 GaAs	2.00	–	30	100	Phototransistor

Products	Test Conditions (nm) λp	E_{e+} (mW/cm^2) Max	E_{e+}/E_{e-} Typ	V_{OL} (V) Max	I_{CC} (mA) Max	Sensor Type
TO-18 OPTOLOGIC® Package						
QSA156	880 AlGaAs	0.250	1.2	0.40	5	Buffer Totem Pole
QSA157	880 AlGaAs	0.250	1.2	0.40	5	Inverter Totem Pole
QSA158	880 AlGaAs	0.250	1.2	0.40	5	Buffer Open Collector
QSA159	880 AlGaAs	0.250	1.2	0.40	5	Inverter Open Collector

Reflective Opto Switches

Products	Test Conditions			$I_{C(ON)}$ (mA) Min	BV_{CEO} (V) Min	Output	Wavelength λp (nm)
	I_F (mA)	V_{CE} (V)	Sensor to Surface Distance (inch)				
Reflective Arrowhead with Dust Cover (Focused)							
QRB1113	40	5	0.150	0.20	30	Phototransistor	940
QRB1114	40	5	0.150	0.60	30	Phototransistor	940
Reflective Focusing Sensor PCB Mount							
QRE00034	20	10	0.160	0.16	30	Phototransistor	940
Reflective Non-focusing Sensor PCB Mount							
QRD1113	20	5	0.050	0.30	30	Phototransistor	880
QRD1114	20	5	0.050	1.00	30	Phototransistor	880
QRD1313	20	5	0.050	10	15	Photodarlington	880
Reflective Surface Mount (Unfocused)							
QRE1113GR	20	5	0.040	0.15	30	Phototransistor	940
Reflective Arrowhead with Dust Cover, Wires (Focused)							
QRB1133	40	5	0.150	0.20	30	Phototransistor	940
QRB1134	40	5	0.150	0.60	30	Phototransistor	940

Transmissive Opto Switches

Products	Test Conditions		$I_{C(ON)}$ (mA) Min	BV_{CEO} (V) Min	Output	Aperture Width (mm)		Gap Width (mm)
	I_F (mA)	V_{CE} (V)				Emitter	Sensor	
Slotted Switch H21 (Analog – Standard Resolution)								
H21A1	20	5	1.00	30	Phototransistor	0.94	0.94	3.15
H21A2	20	5	2.00	30	Phototransistor	0.94	0.94	3.15
H21A3	20	5	4.00	30	Phototransistor	0.94	0.94	3.15
H21A4	20	5	1.00	55	Phototransistor	0.94	0.94	3.15
H21A5	20	5	2.00	55	Phototransistor	0.94	0.94	3.15
H21A6	20	5	4.00	55	Phototransistor	0.94	0.94	3.15
H21B1	10	1.5	7.50	30	Photodarlington	0.94	0.94	3.15
H21B2	10	1.5	14.00	30	Photodarlington	0.94	0.94	3.15
H21B3	10	1.5	25.00	30	Photodarlington	0.94	0.94	3.15
H21B4	10	1.5	7.50	55	Photodarlington	0.94	0.94	3.15
H21B5	10	1.5	14.00	55	Photodarlington	0.94	0.94	3.15
H21B6	10	1.5	25.00	55	Photodarlington	0.94	0.94	3.15

Products	Test Conditions V_{CC} (V)	I_{F+} (mA) Max	I_{CC} (mA) Max	Output	Aperture Width (mm)		Gap Width (mm)
					Emitter	Sensor	
Slotted Switch Logic H21 (OPTOLOGIC® – Standard Resolution)							
H21LTB	5	15	5.0	Buffer Totem Pole	0.94	0.94	3.15
H21LTI	5	15	5.0	Inverter Totem Pole	0.94	0.94	3.15
H21LOB	5	15	5.0	Buffer Open Collector	0.94	0.94	3.15
H21LOI	5	15	5.0	Inverter Open Collector	0.94	0.94	3.15

Products	Test Conditions		$I_{C(ON)}$ (mA) Min	BV_{CEO} (V) Min	Output	Aperture Width (mm)		Gap Width (mm)
	I_F (mA)	V_{CE} (V)				Emitter	Sensor	
Slotted Switch H22 (Analog – Standard Resolution)								
H22A1	20	5	1.00	30	Phototransistor	0.94	0.94	3.15
H22A2	20	5	2.00	30	Phototransistor	0.94	0.94	3.15
H22A3	20	5	4.00	30	Phototransistor	0.94	0.94	3.15
H22A4	20	5	1.00	55	Phototransistor	0.94	0.94	3.15
H22A5	20	5	2.00	55	Phototransistor	0.94	0.94	3.15

Transmissive Opto Switches (Continued)

Products	Test Conditions		$I_{C(ON)}$ (mA) Min	BV_{CEO} (V) Min	Output	Aperture Width (mm)		Gap Width (mm)
	I_F (mA)	V_{CE} (V)				Emitter	Sensor	
Slotted Switch H22 (Analog – Standard Resolution) (continued)								
H22A6	20	5	4.00	55	Phototransistor	0.94	0.94	3.15
H22B1	10	1.5	7.50	30	Photodarlington	0.94	0.94	3.15
H22B2	10	1.5	14.00	30	Photodarlington	0.94	0.94	3.15
H22B3	10	1.5	25.00	30	Photodarlington	0.94	0.94	3.15
H22B4	10	1.5	7.50	55	Photodarlington	0.94	0.94	3.15
H22B5	10	1.5	14.00	55	Photodarlington	0.94	0.94	3.15
H22B6	10	1.5	25.00	55	Photodarlington	0.94	0.94	3.15

Products	Test Conditions V_{CC} (V)	I_{F+} (mA) Max	I_{CC} (mA) Max	Output	Aperture Width (mm)		Gap Width (mm)
					Emitter	Sensor	
Slotted Switch Logic H22 (OPTOLOGIC® – Standard Resolution)							
H22LTB	5	15	5.0	Buffer Totem Pole	0.94	0.94	3.15
H22LTI	5	15	5.0	Inverter Totem Pole	0.94	0.94	3.15
H22LOB	5	15	5.0	Buffer Open Collector	0.94	0.94	3.15
H22LOI	5	15	5.0	Inverter Open Collector	0.94	0.94	3.15

Products	Test Conditions		$I_{C(ON)}$ (mA) Min	BV_{CEO} (V) Min	Output	Aperture Width (mm)		Gap Width (mm)
	I_F (mA)	V_{CE} (V)				Emitter	Sensor	
Slotted Switch QVA (Analog) (Standard Resolution)								
QVA11134	20	5	1.00	30	Phototransistor	1.27	1.27	3.18
Slotted Switch QVA (Analog) (High Resolution)								
QVA21114	20	5	0.20	30	Phototransistor	0.25	0.25	3.18

Products	Test Conditions		$I_{C(ON)}$ (mA) Min	BV_{CEO} (V) Min	Output	Aperture Width (mm)		Gap Width (mm)
	I_F (mA)	V_{CE} (V)				Emitter	Sensor	
Slotted Switch QVB (Analog) (Standard Resolution)								
QVB11134	20	5	1.00	30	Phototransistor	1.27	1.27	3.18
Slotted Switch QVB (Analog) (High Resolution)								
QVB21114	20	5	0.20	30	Phototransistor	0.25	0.25	3.18
Slotted Switch 5 mm Gap, 10 mm lead spacing (Analog – High Resolution)								
QVE00832	20	10	0.50	30	Phototransistor	0.50	0.50	5.00

Transmissive Opto Switches (Continued)

Products	Test Conditions		$I_{C(ON)}$ (mA) Min	BV_{CEO} (V) Min	Output	Aperture Width (mm)		Gap Width (mm)
	I_F (mA)	V_{CE} (V)				Emitter	Sensor	
Slotted Switch 5 mm Gap, 9 mm lead spacing (Analog – High Resolution)								
QVE00118	20	10	0.50	30	Phototransistor	0.50	0.50	5.00

Products	Test Conditions V_{CC} (V)	I_{CC} (mA) Max	Output	Aperture Width (mm)		Gap Width (mm)
				Emitter	Sensor	
Slotted Switch Logic 5 mm (OPTOLOGIC® – High Resolution)						
QVE00120	5	5.0	Buffer Open Collector	0.50	0.50	5.00

Products	Test Conditions		$I_{C(ON)}$ (mA) Min	BV_{CEO} (V) Min	Output	Aperture Width (mm)		Gap Width (mm)
	I_F (mA)	V_{CE} (V)				Emitter	Sensor	
Slotted Switch High Profile (Analog – Low Resolution)								
QVE11233	20	5	0.50	30	Phototransistor	2.0	2.0	3.81
Slotted Switch MOC (Analog – Standard Resolution)								
MOC70P1	20	10	1.0	30	Phototransistor	1.0	1.0	5.08
MOC70P2	20	10	2.0	30	Phototransistor	1.0	1.0	5.08
MOC70P3	20	10	4.0	30	Phototransistor	1.0	1.0	5.08
Slotted Switch 8 mm Gap (Analog – High Resolution)								
QVE00034	20	10	0.50	30	Phototransistor	0.50	0.50	8.00
Surface Mount Opto Interrupter QCK (Analog – Low Resolution)								
QCK3	5	1.5	1.0	30	Photodarlington	NA	NA	3.99
QCK5	20	5	2.00	30	Phototransistor	NA	NA	3.99
Surface Mount Switch 2 mm Gap (Analog – High Resolution)								
QVE00033	5	5	0.10	30	Phototransistor	0.4	0.4	2.00
Slotted Switch Horizontal with Wires (Analog – High Resolution)								
QVE00039	20	10	0.50	30	Phototransistor	0.25	0.25	2.41

Products	Test Conditions V_{CC} (V)	I_{CC} (mA) Max	Output	Aperture Width (mm)		Gap Width (mm)
				Emitter	Sensor	
Slotted Switch Logic with Wires (OPTOLOGIC® – High Resolution)						
QVE00112	5	20.0	Inverter Open Collector	0.35	0.35	3.00

Single Color (Top-Emitting)

Products	Source Color	Lense Color	Wavelength λp (nm)	Viewing Angle	Forward Voltage V_F (V)		Luminous Intensity I_V (mcd)		Forward Current (mA)
					Typ	Max	Min	Typ	
0603 Package (0.8mm Height)									
1.6mm(L) x 0.8mm(W) x 0.8mm(H)									
QTLP600CRTR	Red	Water Clear	630	100	2	2.4	40	80	20
QTLP600CETR	Orange	Water Clear	620	100	2	2.4	40	80	20
QTLP600COTR	Yellow-Orange	Water Clear	610	100	2	2.4	40	80	20
QTLP600CYTR	Yellow	Water Clear	590	100	2	2.4	40	80	20
QTLP600CAGTR	Yellow-Green	Water Clear	575	100	2	2.4	20	35	20
QTLP600CIGTR	True Green	Water Clear	520	100	3.5	4	80	150	20
QTLP600CIBTR	Blue	Water Clear	465	100	3.5	4	20	45	20
QTLP600CEBTR	Blue	Water Clear	465	100	2.8	3.15	8	25	5
0603 Package (0.6mm Height)									
1.6mm(L) x 0.8mm(W) x 0.6mm(H)									
QTLP601CRTR	Red	Water Clear	630	120	2	2.4	40	80	20
QTLP601CETR	Orange	Water Clear	620	120	2	2.4	40	80	20
QTLP601COTR	Yellow-Orange	Water Clear	610	120	2	2.4	40	80	20
QTLP601CYTR	Yellow	Water Clear	590	120	2	2.4	40	80	20
QTLP601CAGTR	Yellow-Green	Water Clear	575	120	2	2.4	20	35	20
QTLP601CIGTR	True Green	Water Clear	520	120	3.5	4	80	150	20
QTLP601CIBTR	Blue	Water Clear	465	120	3.5	4	10	25	20
QTLP601CEBTR	Blue	Water Clear	465	120	2.8	3.15	8	26	5
QTLP601CIWTR	White	Yellow Diffused	–	120	2.8	3.15	20	60	5
0603 Package (0.35mm Height)									
1.6mm(L) x 0.8mm(W) x 0.35mm(H)									
QTLP603CEBTR	Blue	Water Clear	465	120	2.8	3.15	8	26	5
QTLP603CIWTR	White	Yellow Diffused	–	120	2.8	3.15	20	60	5
0805 Package									
2.0mm(L) x 1.25mm(W) x 1.1mm(H)									
QTLP630CRTR	Red	Water Clear	630	140	2	2.4	40	80	20
QTLP630CETR	Orange	Water Clear	620	140	2	2.4	40	80	20
QTLP630COTR	Yellow-Orange	Water Clear	610	140	2	2.4	40	80	20
QTLP630CYTR	Yellow	Water Clear	590	140	2	2.4	40	80	20
QTLP630CAGTR	Yellow-Green	Water Clear	575	140	2	2.4	20	35	20
QTLP630CIGTR	True Green	Water Clear	520	140	3.5	4	80	150	20
QTLP630CIBTR	Blue	Water Clear	465	140	3.5	4	20	25	20

Single Color (Top-Emitting) (Continued)

Products	Source Color	Lense Color	Wavelength λp (nm)	Viewing Angle	Forward Voltage V_F (V)		Luminous Intensity I_V (mcd)		Forward Current (mA)
					Typ	Max	Min	Typ	
1206 Package									
3.2mm(L) x 1.6mm(W) x 1.1mm(H)									
QTLP650CRTR	Red	Water Clear	630	130	2	2.4	40	80	20
QTLP650CETR	Orange	Water Clear	620	130	2	2.4	40	80	20
QTLP650CYTR	Yellow	Water Clear	590	130	2	2.4	40	80	20
QTLP650CAGTR	Yellow-Green	Water Clear	575	130	2	2.4	20	35	20
QTLP650CIGTR	True Green	Water Clear	520	130	3.5	4	80	150	20
QTLP650CIBTR	Blue	Water Clear	465	130	3.5	4	35	45	20
QTLP650CEBTR	Blue	Water Clear	465	130	2.8	3.15	8	26	5
1206 Package (Inner Lens)									
3.0mm(L) x 1.5mm(W) x 1.5mm(H)									
QTLP651CRTR	Red	Water Clear	630	60	2	2.4	70	160	20
QTLP651CETR	Orange	Water Clear	620	60	2	2.4	70	160	20
QTLP651CYTR	Yellow	Water Clear	590	60	2	2.4	70	160	20
QTLP651CAGTR	Yellow-Green	Water Clear	575	60	2	2.4	25	50	20
QTLP651CIGTR	True Green	Water Clear	520	20	3.5	4	60	100	20
QTLP651CIBTR	Blue	Water Clear	465	20	3.5	4	25	45	20
1206 Package (Reverse Mountable)									
3.2mm(L) x 1.6mm(W) x 1.1mm(H)									
QTLP652CRTR	Red	Water Clear	630	130	2	2.4	20	50	20
QTLP652CETR	Orange	Water Clear	620	130	2	2.4	20	50	20
QTLP652COTR	Yellow-Orange	Water Clear	610	130	2	2.4	20	50	20
QTLP652CYTR	Yellow	Water Clear	590	130	2	2.4	20	50	20
QTLP652CAGTR	Yellow-Green	Water Clear	575	130	2	2.4	15	28	20
QTLP652CIGTR	True Green	Water Clear	520	130	3.5	4	70	110	20
QTLP652CIBTR	Blue	Water Clear	465	130	3.5	4	20	45	20
QTLP652CEBTR	Blue	Water Clear	465	130	2.8	3.15	8	26	5
1.8mm Dome Package									
3.2mm(L) x 2.4mm(W) x 2.6mm(H)									
QTLP660CRTR	Red	Water Clear	630	30	2	2.4	150	400	20
QTLP660CETR	Orange	Water Clear	620	30	2	2.4	150	400	20
QTLP660COTR	Yellow-Orange	Water Clear	610	30	2	2.4	150	400	20
QTLP660CYTR	Yellow	Water Clear	590	30	2	2.4	150	400	20
QTLP660CAGTR	Yellow-Green	Water Clear	575	30	2	2.4	120	170	20
QTLP660CIGTR	True Green	Water Clear	520	30	3.5	4	500	900	20
QTLP660CIBTR	Blue	Water Clear	465	30	3.5	4	100	150	20

Single Color (Top-Emitting) (Continued)

Products	Source Color	Lense Color	Wavelength λp (nm)	Viewing Angle	Forward Voltage V_F (V)		Luminous Intensity I_V (mcd)		Forward Current (mA)
					Typ	Max	Min	Typ	
PLCC-2 Package									
3.2mm(H) x 2.8mm(H) x 1.85mm(H)									
QTLP670CSTR	Red	Water Clear	640	120	2	2.4	70	140	20
QTLP670CRTR	Red	Water Clear	630	120	2	2.4	70	140	20
QTLP670CETR	Orange	Water Clear	620	120	2	2.4	110	450	20
QTLP670COTR	Yellow-Orange	Water Clear	610	120	2	2.4	110	280	20
QTLP670CYTR	Yellow	Water Clear	590	120	2	2.4	70	400	20
QTLP670CAGTR	Yellow-Green	Water Clear	575	120	2	2.4	45	100	20
QTLP670CIGTR	True Green	Water Clear	520	120	3.5	4.2	110	450	20
QTLP670CIBTR	Blue	Water Clear	465	120	3.5	4.2	45	140	20
QTLP670CBTR	Blue	Water Clear	430	120	3.5	4.2	20	45	10
QTLP670CIWTR	White	Yellow Diffused	–	120	3.5	4.2	110	450	20
PLCC-4 Package (High Current)									
3.2mm(H) x 2.8mm(H) x 1.9mm(H)									
QTLP673CRTR	Red	Water Clear	630	120	2.2	2.6	285	450	50
QTLP673CETR	Orange	Water Clear	620	120	2.2	2.6	285	450	50
QTLP673COTR	Yellow-Orange	Water Clear	610	120	2.2	2.6	285	450	50
QTLP673CYTR	Yellow	Water Clear	590	120	2.2	2.6	285	450	50
QTLP673CIGTR	True Green	Water Clear	520	120	3.9	4.55	285	650	30
QTLP673CICTR	Cyan	Water Clear	502	120	3.9	4.55	285	650	30
QTLP673CIBTR	Blue	Water Clear	465	120	3.9	4.55	90	180	30
QTLP673CIWTR	White	Yellow Diffused	–	120	3.9	4.55	285	650	30

Single Color (Side-Emitting)

Products	Source Color	Lense Color	Wavelength λp (nm)	Viewing Angle	Forward Voltage V_F (V)		Luminous Intensity I_V (mcd)		Forward Current (mA)
					Typ	Max	Min	Typ	
Right Angle Package									
3.0mm(L) x 2.0mm(W) x 1.0mm(H)									
QTLP610CRTR	Red	Water Clear	630	120	2	2.4	40	80	20
QTLP610CETR	Orange	Water Clear	620	120	2	2.4	40	80	20
QTLP610COTR	Yellow-Orange	Water Clear	610	120	2	2.4	40	80	20
QTLP610CYTR	Yellow	Water Clear	590	120	2	2.4	40	80	20
QTLP610CAGTR	Yellow-Green	Water Clear	575	120	2	2.4	20	35	20
QTLP610CIGTR	True Green	Water Clear	520	120	3.5	4	70	120	20
QTLP610CIBTR	Blue	Water Clear	465	120	3.5	4	20	45	20
QTLP610CEBTR	Blue	Water Clear	465	120	2.8	3.15	8	26	5
Compact Right Angle Package (Dome Lens)									
2.1mm(L) x 1.0mm(W) x 0.6mm(H)									
QTLP611CAGTR	Yellow-Green	Water Clear	575	130	2	2.4	10	20	20
QTLP611CEBTR	Blue	Water Clear	465	130	2.8	3.15	8	26	5
QTLP611CIWTR	White	Yellow Diffused	–	130	2.8	3.15	20	60	5
Compact Right Angle Package (Flat Lens)									
1.7mm(L) x 1.1mm(W) x 0.6mm(H)									
QTLP613CEBTR	Blue	Water Clear	465	140	2.7	3.1	8	26	5
QTLP613CIWTR	White	Yellow Diffused	–	140	2.7	3.1	20	60	5
X-bright Right Angle Package (1.0mm Height)									
2.8mm(L) x 1.2mm(W) x 1.0mm(H)									
FOL215WTR	White	Yellow Diffused	–	110	3.2	3.5	360	650	20
X-bright Right Angle Package (0.8mm Height)									
4.0mm(L) x 1.4mm(W) x 0.8mm(H)									
FOL216WTR	White	Yellow Diffused	–	110	3.2	3.5	360	650	20

Bi-color (Top-Emitting)

Products	Source Color	Lense Color	Wavelength λp(nm)	Viewing Angle	Forward Voltage V_F (V)		Luminous Intensity I_V (mcd)		Forward Current
					Typ	Max	Min	Typ	(mA)
0806 Bi-color Package									
1.9mm(L) x 1.6mm(W) x 0.8mm(H)									
QTLP600CRYTR	Red / Yellow	Water Clear	630 / 590	130	2.0/2.0	2.4/2.4	10.0/10.0	30/30	20 / 20
QTLP600CRAGTR	Red / Yellow-Green	Water Clear	630 / 575	130	2.0/2.0	2.4/2.4	10.0/10.0	30/15	20 / 20
1210 Bi-color Package									
3.2mm(L) x 2.7mm(W) x 1.1mm(H)									
QTLP650CRYTR	Red / Yellow	Water Clear	630 / 590	140	2.0/2.0	2.4/2.4	15/15	35/35	20 / 20
QTLP650CRAGTR	Red / Yellow-Green	Water Clear	630 / 575	140	2.0/2.0	2.4/2.4	15/10	35/15	20 / 20
1210 Bi-color Package (Inner Lenss)									
3.0mm(W) x 2.5mm(W) x 1.5mm(H)									
QTLP651CRYTR	Red / Yellow	Water Clear	630 / 590	60	2.0/2.0	2.4/2.4	25/20	50/50	20 / 20
QTLP651CRAGTR	Red / Yellow-Green	Water Clear	630 / 575	60	2.0/2.0	2.4/2.4	25/15	50/25	20 / 20
QTLP651CYAGTR	Yellow / Yellow-Green	Water Clear	590 / 575	60	2.0/2.0	2.4/2.4	20/15	55/25	20 / 20
PLCC-4 Bi-color Package									
3.2mm(H) x 2.8mm(H) x 1.9mm(H)									
QTLP670CRYTR	Red / Yellow	Water Clear	630 / 590	120	2.0/2.0	2.4/2.4	20/20	55/55	20 / 20
QTLP670CRAGTR	Red / Yellow-Green	Water Clear	630 / 575	120	2.0/2.0	2.4/2.4	20/20	55/55	20 / 20

Tri-Color (Top-Emitting)

Products	Source Color	Lense Color	Wavelength λp(nm)	Viewing Angle	Forward Voltage V_F (V)		Luminous Intensity I_V (mcd)		Forward Current
					Typ	Max	Min	Typ	(mA)
0606 Tri-color Package (4-Pin)									
1.6mm(L) x 1.6mm(H) x 0.35mm(H)									
QTLP600CRGBTR	Red/True Green/Blue	Water Clear	630/520/465	120	1.9/3.3/3.3	2.4/3.9/3.9	72/112/28.5	100/180/50	20/20/20
0606 Tri-color Package (6-Pin)									
1.6mm(L) x 1.6mm(H) x 0.35mm(H)									
QTLP606CRGBTR	Red/True Green/Blue	Water Clear	630/520/465	120	1.9/3.3/3.3	2.4/3.9/3.9	72/112/28.5	100/180/50	20/20/20
1210 Tri-color Package									
3.2mm(L) x 2.7mm(W) x 1.1mm(H)									
QTLP650DRGBTR	Red/True Green/Blue	Diffused	630/520/465	140	1.9/3.3/3.3	2.4/3.9/3.9	25/63/25	60/130/40	20/20/20

Tri-Color (Side-Emitting)

Products	Source Color	Lense Color	Wavelength λp(nm)	Viewing Angle	Forward Voltage V_F (V)		Luminous Intensity I_V (mcd)		Forward Current
					Typ	Max	Min	Typ	(mA)
Right Angle Tri-color Package (Dome Lens)									
3.2mm(L) x 1.5mm(W) x 1.0mm(H)									
QTLP614CRGBTR	Red/True Green/Blue	Water Clear	636/523/468	160	2.0/3.5/3.5	2.6/4.2/4.2	40/63/25	110/100/40	20/20/20

MV7/MV8 Series Through-hole Lamps

Products	Source Color	Wavelength λp (nm)	Lense Color	Viewing Angle	Forward Voltage V_F (V)		Luminous Intensity I_V (µcd)		Forward Current (mA)
					Typ	Max	Min	Typ	
T-1 3/4 Package									
MV7042	Red	645	Water Clear	60	2.1	2.8	100	150	20
MV7043	Red	645	Water Clear	60	2.1	2.8	160	240	20
MV7044	Red	645	Water Clear	60	2.1	2.8	250	375	20
MV7342	Yellow	590	Water Clear	60	2.1	2.8	100	150	20
MV7343	Yellow	590	Water Clear	60	2.1	2.8	160	240	20
MV7344	Yellow	590	Water Clear	60	2.1	2.8	250	375	20
MV7441	Green	565	Water Clear	60	2.1	2.8	100	150	20
MV7442	Green	565	Water Clear	60	2	2.8	160	240	20
MV7742	Orange	620	Water Clear	60	2.1	2.8	100	150	20
MV7743	Orange	620	Water Clear	60	2.1	2.8	160	240	20
MV7744	Orange	620	Water Clear	60	2.1	2.8	250	375	20
MV7842	Orange-Red	630	Water Clear	60	–	–	100	150	20
MV7843	Orange-Red	630	Water Clear	60	–	–	160	240	20
MV7844	Orange-Red	630	Water Clear	60	–	–	250	375	20
MV8003	Red	645	Water Clear	20	2.1	2.8	630	940	20
MV8004	Red	645	Water Clear	20	2.1	2.8	1000	1500	20
MV8005	Red	645	Water Clear	20	2.1	2.8	1600	2400	20
MV8013	Red	645	Water Clear	12	2.1	2.4	630	940	20
MV8014	Red	645	Water Clear	12	2.1	2.4	1000	1500	20
MV8015	Red	645	Water Clear	12	2.1	2.4	1600	2400	20
MV8031	Red	645	Water Clear	30	2.1	2.8	400	600	20
MV8032	Red	645	Water Clear	30	2.1	2.8	630	940	20
MV8041	Red	645	Water Clear	45	2.1	2.8	160	240	20
MV8102	Red	660	Water Clear	20	1.7	2.4	250	370	20
MV8103	Red	660	Water Clear	20	1.7	2.4	630	940	20
MV8104	Red	660	Water Clear	20	1.7	2.4	1000	1500	20
MV8111	Red	660	Water Clear	12	1.7	2.4	250	370	20
MV8112	Red	660	Water Clear	12	1.7	2.4	630	940	20
MV8113	Red	660	Water Clear	12	1.7	2.4	1000	1500	20
MV8114	Red	660	Water Clear	12	1.7	2.4	1600	2400	20
MV8132	Red	660	Water Clear	30	1.7	2.4	630	940	20
MV8133	Red	660	Water Clear	30	1.7	2.4	1000	1500	20
MV8140	Red	660	Water Clear	40	1.7	2.4	120	220	20

MV7/MV8 Series Through-hole Lamps (Continued)

Products	Source Color	Wavelength λp (nm)	Lense Color	Viewing Angle	Forward Voltage V_F (V)		Luminous Intensity I_V (µcd)		Forward Current (mA)
					Typ	Max	Min	Typ	
MV8141	Red	660	Water Clear	40	–	–	250	370	20
MV8190	Red	660	Diffused	45	–	–	63	100	20
MV8191	Red	660	Diffused	45	–	–	100	200	20
MV8303	Yellow	590	Water Clear	20	2.1	2.8	630	940	20
MV8304	Yellow	590	Water Clear	20	2.1	2.8	1000	1500	20
MV8305	Yellow	590	Water Clear	20	2.1	2.8	1600	2400	20
MV8306	Yellow	590	Water Clear	20	2.1	2.8	2500	3500	20
MV8313	Yellow	590	Water Clear	12	2.1	2.8	630	940	20
MV8314	Yellow	590	Water Clear	12	2.1	2.8	1000	1500	20
MV8315	Yellow	590	Water Clear	12	2.1	2.8	1600	2400	20
MV8316	Yellow	590	Water Clear	12	2.1	2.8	2500	3500	20
MV8317	Yellow	590	Water Clear	12	2.1	2.8	4500	5500	20
MV8331	Yellow	590	Water Clear	30	2.1	2.8	400	630	20
MV8332	Yellow	590	Water Clear	30	2.1	2.8	630	940	20
MV8333	Yellow	590	Water Clear	30	2.1	2.8	1000	1500	20
MV8334T	Yellow	590	Water Clear	30	–	–	1000	3000	20
MV8341	Yellow	590	Water Clear	45	2.1	2.8	160	240	20
MV8342	Yellow	590	Water Clear	45	2.1	2.8	250	370	20
MV8410	Green	565	Water Clear	12	2.1	2.8	160	240	20
MV8411	Green	565	Water Clear	12	2.1	2.8	250	370	20
MV8412	Green	565	Water Clear	12	2.1	2.8	400	600	20
MV8703	Orange	620	Water Clear	20	2.1	2.8	630	940	20
MV8704	Orange	620	Water Clear	20	2.1	2.8	1000	1500	20
MV8705	Orange	620	Water Clear	20	2.1	2.8	1600	2400	20
MV8706	Orange	620	Water Clear	20	2.1	2.8	2500	3500	20
MV8713	Orange	620	Water Clear	12	2.1	2.8	630	940	20
MV8714	Orange	620	Water Clear	12	2.1	2.8	1000	1500	20
MV8715	Orange	620	Water Clear	12	2.1	2.8	1600	2400	20
MV8716	Orange	620	Water Clear	12	2.1	2.8	2500	3500	20
MV8731	Orange	620	Water Clear	20	2.1	2.8	400	600	20
MV8732	Orange	620	Water Clear	20	2.1	2.8	630	940	20
MV8741	Orange	620	Water Clear	20	2.1	2.8	250	370	20
MV8742	Orange	620	Water Clear	20	2.1	2.8	400	600	20
MV8803	Orange-Red	630	Water Clear	20	2.1	2.8	630	940	20

MV7/MV8 Series Through-hole Lamps (Continued)

Products	Source Color	Wavelength λp (nm)	Lense Color	Viewing Angle	Forward Voltage V_F (V)		Luminous Intensity I_V (µcd)		Forward Current (mA)
					Typ	Max	Min	Typ	
MV8804	Orange-Red	630	Water Clear	20	2.1	2.8	1000	1500	20
MV8805	Orange-Red	630	Water Clear	20	2.1	2.8	1600	2400	20
MV8813	Orange-Red	630	Water Clear	12	2.1	2.8	630	940	20
MV8814	Orange-Red	630	Water Clear	12	2.1	2.8	1000	1500	20
MV8815	Orange-Red	630	Water Clear	12	2.1	2.8	1600	2400	20
MV8816	Orange-Red	630	Water Clear	12	2.1	2.8	2500	3500	20
MV8832	Orange-Red	630	Water Clear	30	2.1	2.8	630	940	20
MV8834T	Orange-Red	630	Water Clear	30	2	2.4	1600	2500	20
MV8B01	Blue	430	Water Clear	24	3.8	4.5	400	600	20
MV8B11	Blue	430	Water Clear	10	3.8	4.5	400	600	20
MV8B12	Blue	430	Water Clear	10	3.8	4.5	630	940	20
MV8G01	Blue-Green	502	Water Clear	20	3.6	4.2	1500	1900	20
MV8G03	Blue-Green	502	Water Clear	20	3.6	4.2	3000	3500	20
MV8R01	True Green	520	Water Clear	20	3.6	4.2	1500	1900	20
MV8R03	True Green	520	Water Clear	20	3.6	4.2	3000	3500	20
MV8U01	Blue	470	Water Clear	20	3.6	4.2	250	340	20
MV8U03	Blue	470	Water Clear	20	3.6	4.2	550	650	20
MV8W00	White	550	Water Clear	20	3.8	5	1300	2500	20

Optocouplers — 4-Pin DIP

Products	V_F (V) Max	CTR @ 1mA I_F (%)		BV_{CEO} (V) Min	BV_{ECO} (V) Min	t_R/t_F (µs) Max	V_{ISO} AC_{RMS} (V) 1 Minute
		Min	Max				
Photodarlington Output, DC Sensing Input							
H11B815	1.5	600	7500	35	6	2.4 / 2.4	5300

Products	V_F (V) Max	CTR @ ±1mA I_F (%)		BV_{CEO} (V) Min	BV_{ECO} (V) Min	t_R/t_F (µs) Typ	V_{ISO} AC_{RMS} (V) 1 Minute
		Min	Max				
Phototransistor Output, AC Sensing Input							
H11AA814	1.5	20	300	70	6	2.4 / 2.4	5300
H11AA814A	1.5	50	150	70	6	2.4 / 2.4	5300

Products	V_F (V) Max	CTR @ ≤ 10mA I_F (%)		BV_{CEO} (V) Min	BV_{ECO} (V) Min	t_R/t_F (µs) Typ	V_{ISO} AC_{RMS} (V) 1 Minute
		Min	Max				
Phototransistor Output, DC Sensing Input							
FOD817	1.4	50	600	70	6	4 / 3	5000
FOD817A	1.4	80	160	70	6	4 / 3	5000
FOD817B	1.4	130	260	70	6	4 / 3	5000
FOD817C	1.4	200	400	70	6	4 / 3	5000
FOD817D	1.4	300	600	70	6	4 / 3	5000
H11A617A	1.65	40	80	70	7	2.4 / 2.4	5300
H11A617B	1.65	63	125	70	7	2.4 / 2.4	5300
H11A617C	1.65	100	200	70	7	2.4 / 2.4	5300
H11A617D	1.65	160	320	70	7	2.4 / 2.4	5300
H11A817	1.5	50	600	70	6	2.4 / 2.4	5300
H11A817A	1.5	80	160	70	6	2.4 / 2.4	5300
H11A817B	1.5	130	260	70	6	2.4 / 2.4	5300
H11A817C	1.5	200	400	70	6	2.4 / 2.4	5300
H11A817D	1.5	300	600	70	6	2.4 / 2.4	5300

Optocouplers — 4-Pin Full Pitch MFP

Products	V_F (V) Max	CTR @ ±5mA I_F (%)		BV_{CEO} (V) Min	BV_{ECO} (V) Min	t_R/t_F (µs) Max	V_{ISO} AC_{RMS} (V) 1 Minute
		Min	Max				
4–Pin Full Pitch MFP, Phototransistor Output, AC Sensing Input							
HMAA2705	1.4	50	300	40	7	3 / 3	3750
Products	**V_F (V) Max**	**CTR @ ≤ 5mA IF(%)**		**BV_{CEO} (V) Min**	**BV_{ECO}(V) Min**	**t_R/t_F (µs) Max**	**V_{ISO} AC_{RMS} (V) 1 Minute**
		Min	**Max**				
4–Pin Full Pitch MFP, Phototransistor Output, DC Sensing Input							
HMA121	1.3	50	600	80	7	3 / 3	3750
HMA121A	1.3	100	300	80	7	3 / 3	3750
HMA121B	1.3	50	150	80	7	3 / 3	3750
HMA121C	1.3	100	200	80	7	3 / 3	3750
HMA121D	1.3	50	100	80	7	3 / 3	3750
HMA121E	1.3	150	300	80	7	3 / 3	3750
HMA121F	1.3	100	600	80	7	3 / 3	3750
HMA124	1.3	100	1200	80	7	3 / 3	3750
HMA2701	1.4	50	300	40	7	3 / 3	3750
HMA2701A	1.4	150	300	40	7	3 / 3	3750
HMA2701B	1.4	80	160	40	7	3 / 3	3750

Products	I_{FT}(mA) Max	V_{TM}(V) Max	V_{DRM}(V) Min	I_H (µA) Typ	I_{DRM}(nA) Max	V_{ISO} AC_{RMS}(V) 1 Minute
4–Pin Full Pitch MFP, Phototransistor Output, DC Sensing Input						
FODM3010	15	3	250	300	100	3750
FODM3011	10	3	250	300	100	3750
FODM3012	5	3	250	300	100	3750
FODM3021	15	3	400	300	100	3750
FODM3022	10	3	400	300	100	3750
FODM3023	5	3	400	300	100	3750
FODM3051	15	3	600	300	100	3750
FODM3052	10	3	600	300	100	3750
FODM3053	5	3	600	300	100	3750

Optocouplers — 4-Pin Half Pitch MFP

Products	V_F (V) Max	CTR @ ±5mA I_F (%)		BV_{CEO} (V) Min	BV_{ECO} (V) Min	t_R/t_F (µs) Max	V_{ISO} AC_{RMS} (V) 1 Minute
		Min	Max				
4–Pin Half Pitch MFP, Phototransistor Output, AC Sensing Input							
HMHAA280	1.4	50	600	80	7	3 / 3	2500
Products	**V_F (V) Max**	**CTR @ ≤ 10mA I_F (%)**		**BV_{CEO} (V) Min**	**BV_{ECO} (V) Min**	**t_R/t_F (µs) Max**	**V_{ISO} AC_{RMS} (V) 1 Minute**
		Min	**Max**				
4–Pin Half Pitch MFP, Phototransistor Output, DC Sensing Input							
HMHA2801	1.3	80	600	80	7	3 / 3	2500
HMHA2801A	1.3	80	160	80	7	3 / 3	2500
HMHA2801B	1.3	50	150	80	7	3 / 3	2500
HMHA2801C	1.4	50	100	80	7	3 / 3	2500
HMHA281	1.3	50	600	80	7	3 / 3	2500

Optocouplers — 4-Pin, TO-18

Products	V_F (V) Max	CTR @ 10mA I_F (%)		BV_{CEO} (V) Min	BV_{ECO} (V) Min	$V_{CE(SAT)}$ (V) Max	V_{ISO} DC (V) 1 Second
		Min	Max				
4–Pin, Hermetic Phototransistor Output, DC Sensing Input							
MCT4	1.5	15	–	30	7	0.5	1000
MCT4R	1.5	15	–	30	7	0.5	1000

Optocouplers — 5-Pin MFP

Products	CTR @ 16 mA I_F (%)		V_{OL} (V) Max	I_{CCL} (µA) Max	t_{PHL}/t_{PLH} (µs) Max	CMR (kV/µs) CM_H/CM_L Min	V_{ISO} AC_{RMS} (V) 1 Minute
	Min	Max					
5-Pin , 1 Mbit/s High-Speed Transistor Output, DC Sensing Input							
FODM452	20	50	0.4	200	0.8 / 0.8	5 / 5	3750
FODM453	20	50	0.4	200	0.8 / 0.8	15 / 15	3750

Optocouplers — 6-Pin DIP

Products	V_{IH} (V) Min	V_{IL} (V) Max	V_{OL} (V) Max	I_{OL} (mA) Min	t_{PHL}/t_{PLH} (µs) Max	V_{ISO} AC_{RMS} (V) 1 Minute
10 Mbit/s High–Speed Logic–to–Logic (OPTOLOGIC) – LSTTL to CMOS Buffer, DC Sensing Input						
740L6010	2	0.8	0.6	16	0.12 / 0.18	5300
10 Mbit/s High–Speed Logic–to–Logic (OPTOLOGIC) – LSTTL to CMOS Inverter, DC Sensing Input						
740L6011	2	0.8	0.6	16	0.12 / 0.18	5300
10 Mbit/s High–Speed Logic–to–Logic (OPTOLOGIC) – LSTTL to TTL Buffer, DC Sensing Input						
740L6000	2	0.8	0.6	16	0.1 / 0.1	5300
10 Mbit/s High–Speed Logic–to–Logic (OPTOLOGIC) – LSTTL to TTL Inverter, DC Sensing Input						
740L6001	2	0.8	0.6	16	0.1 / 0.1	5300

Products	R_{DS} (Ω)		V_{BR} (V) Min	I_{46} (nA) Max	t_{ON}/t_{OFF} (µs) Max	V_{ISO} AC_{RMS} (V) 1 Minute
	ON Max	OFF Min				
Bilateral Analog FET Output, DC Sensing Input						
H11F1	200	300M	30	50	25 / 25	5300
H11F2	330	300M	30	50	25 / 25	5300
H11F3	470	300M	15	50	25 / 25	5300

Products	CTR @ ≤ 10mA I_F (%) Min	BV_{CEO} (V) Min	BV_{CBO} (V) Min	BV_{EBO} (V) Min	V_{ISO} AC_{RMS} (V) 1 Minute
High Voltage Photodarlington Output, DC Sensing Input					
H11G1	1000	100	100	7	5300
H11G2	1000	80	80	7	5300
H11G3	200	55	55	7	5300

Products	CTR @ 10mA I_F (%) Min	BV_{CEO} (V) Min	BV_{CBO} (V) Min	BV_{ECO} (V) Min	V_{ISO} AC_{RMS} (V) 1 Minute
High Voltage Phototransistor Output, DC Sensing Input					
4N38	20	80	80	7	5300
H11D1	20	300	300	7	5300
H11D2	20	300	300	7	5300
H11D3	20	200	200	7	5300
H11D4	10	200	200	7	5300
MOC8204	20	400	400	7	5300

Optocouplers — 6-Pin DIP (Continued)

Products	I_{FT} (mA) Max	V_{TM} (V) Max	V_{DM} (V) Min	I_{DM} (µA) Max	I_H (mA) Max	V_{ISO} AC_{RMS} (V) 1 Minute
Photo SCR Output, DC Threshold Sensing Input						
4N39	30	1.3	200	50	1	5300
4N40	14	1.3	400	150	1	5300
H11C1	11	1.3	200	50	–	5300
H11C2	11	1.3	200	50	–	5300
H11C3	14	1.3	200	50	–	5300
H11C4	11	1.3	400	150	–	5300
H11C5	11	1.3	400	150	–	5300
H11C6	14	1.3	400	150	–	5300

Products	CTR @ 10mA I_F (%) Min	BV_{CEO} (V) Min	BV_{CBO} (V) Min	BV_{ECO} (V) Min	t_{ON}/t_{OFF} (µs) Max	V_{ISO} AC_{RMS} (V) 1 Minute
Photodarlington Output, DC Sensing Input						
4N29	100	30	30	5	5 / 40	5300
4N30	100	30	30	5	5 / 40	5300
4N31	50	30	30	5	5 / 40	5300
4N32	500	30	30	5	5 / 100	5300
4N33	500	30	30	5	5 / 100	5300
CNX48U	600	30	30	7	70 / 190	5300
H11B1	500	25	30	7	25 / 18	5300
H11B2	200	25	30	7	25 / 18	5300
H11B255	100	55	55	7	25 / 18	5300
H11B3	100	25	30	7	25 / 18	5300
MOC8080	500	55	55	7	3.5 / 25	5300
TIL113	300	30	30	7	5 / 100	5300

Products	V_F (V) Max	CTR @ 10mA I_F (%) Min	BV_{CEO} (V) Min	BV_{ECO} (V) Min	t_{ON}/t_{OFF} (µs) Typ	V_{ISO} AC_{RMS} (V) 1 Minute
Photodarlington Output (No Base Connection), DC Sensing Input						
MOC119	1.5	300	30	7	3.5 / 95	5300
MOC8020	2	500	50	5	3.5 / 95	5300
MOC8021	2	1000	50	5	3.5 / 95	5300
MOC8030	2	300	80	5	3.5 / 95	5300
MOC8050	2	500	80	5	3.5 / 95	5300

Optocouplers — 6-Pin DIP (Continued)

Products	CTR@ ±10mA I_F(%) Min	BV_{CEO} (V) Min	BV_{CBO} (V) Min	BV_{ECO} (V) Min	BV_{EBO} (V) Min	V_{ISO} AC_{RMS} (V) 1 Minute
Phototransistor Output, AC Sensing Input						
H11AA1	20	30	70	7	5	5300
H11AA1-M	20	30	70	7	5	4200
H11AA2	10	30	70	7	5	5300
H11AA2-M	10	30	70	7	5	4200
H11AA3	50	30	70	7	5	5300
H11AA3-M	50	30	70	7	5	4200
H11AA4	100	30	70	7	5	5300
H11AA4-M	100	30	70	7	5	4200

Products	CTR @ ≤ 10mA I_F (%)		BV_{CEO} (V) Min	BV_{CBO} (V) Min	BV_{ECO} (V) Min	t_{ON}/t_{OFF} (µs) Typ	V_{ISO} AC_{RMS} (V) 1 Minute
	Min	Max					
Phototransistor Output, DC Sensing Input							
4N25	20	–	30	70	7	2 / 2	5300
4N25-M	20	–	30	70	7	2 / 2	4200
4N26	20	–	30	70	7	2 / 2	5300
4N26-M	20	–	30	70	7	2 / 2	4200
4N27	10	–	30	70	7	2 / 2	5300
4N27-M	10	–	30	70	7	2 / 2	4200
4N28	10	–	30	70	7	2 / 2	5300
4N28-M	10	–	30	70	7	2 / 2	4200
4N35	100	–	30	70	7	2 / 2	5300
4N35-M	100	–	30	70	7	2 / 2	4200
4N36	100	–	30	70	7	2 / 2	5300
4N36-M	100	–	30	70	7	2 / 2	4200
4N37	100	–	30	70	7	2 / 2	5300
4N37-M	100	–	30	70	7	2 / 2	4200
CNX35U	40	160	30	70	7	–	5300
CNX36U	80	200	30	70	7	–	5300
CNX38U	70	210	80	120	7	–	5300
CNX39U	60	100	30	70	7	–	5300
CNX83A.W	40	250	50	70	7	3 / 3	5300
CNY17-1	40	80	70	70	7	–	5300
CNY17-1-M	40	80	70	70	7	–	4200
CNY17-2	63	125	70	70	7	–	5300

Optocouplers — 6-Pin DIP (Continued)

Products	CTR @ ≤ 10mA I_F (%)		BV_{CEO} (V) Min	BV_{CBO} (V) Min	BV_{ECO} (V) Min	t_{ON}/t_{OFF} (µs) Typ	V_{ISO} AC_{RMS} (V) 1 Minute
	Min	Max					
Phototransistor Output, DC Sensing Input (Continued)							
CNY17-2-M	63	125	70	70	7	–	4200
CNY17-3	100	200	70	70	7	–	5300
CNY17-3-M	100	200	70	70	7	–	4200
CNY17-4	160	320	70	70	7	–	5300
H11A1	50	–	30	70	7	2 / 2	5300
H11A1-M	50	–	30	70	7	2 / 2	4200
H11A2	20	–	30	70	7	2 / 2	5300
H11A2-M	20	–	30	70	7	2 / 2	4200
H11A3	20	–	30	70	7	2 / 2	5300
H11A3-M	20	–	30	70	7	2 / 2	4200
H11A4	10	–	30	70	7	2 / 2	5300
H11A4-M	10	–	30	70	7	2 / 2	4200
H11A5	30	–	30	70	7	2 / 2	5300
H11A5-M	30	–	30	70	7	2 / 2	4200
H11AV1-M	100	300	70	70	7	–	4200
H11AV1A-M	100	300	70	70	7	–	4200
H11AV2-M	50	–	70	70	7	–	4200
H11AV2A-M	50	–	70	70	7	–	4200
MCT2	20	–	30	70	7	1.1 / 50	5300
MCT2-M	20	–	30	70	7	2 / 2	4200
MCT210	150	–	30	30	6	2 / 2	5300
MCT2201	100	–	30	70	7	2 / 2	5300
MCT2202	63	125	30	70	7	2 / 2	5300
MCT271	45	90	30	70	7	2 / 2	5300
MCT2E	20	–	30	70	7	1.3 / 20	5300
MCT2E-M	20	–	30	70	7	2 / 2	4200
MOC8100-M	50	–	30	70	–	–	4200
SL5500	50	300	30	30	7	20 / 50	5300
SL5501	25	400	30	30	7	20 / 50	5300
SL5504	25	400	80	120	7	50 / 150	5300
SL5511	25	–	30	30	7	20 / 50	5300
SL5583.W	40	320	50	70	7	–	5300
TIL111	8	–	30	70	–	–	5300
TIL111-M	8	–	30	70	7	–	4200
TIL117-M	50	–	30	70	7	–	4200

Optocouplers — 6-Pin DIP (Continued)

Products	CTR @ ≤ 5mA I_F (%) Min	BV_{CEO} (V) Min	BV_{CBO} (V) Min	BV_{ECO} (V) Min	t_{ON}/t_{OFF} (µs) Max	V_{ISO} AC_{RMS} (V) 1 Minute
Phototransistor Output, Low Current DC Sensing Input						
H11AG1	300	30	70	7	5 / 5	5300
H11AG2	200	30	70	7	5 / 5	5300
H11AG3	100	30	70	7	5 / 5	5300
MCT5200	75	30	30	–	–	5300
MCT5201	120	30	30	–	–	5300
MCT5210	70	30	30	–	–	5300
MCT5211	150	30	30	–	–	5300

Products	V_F (V) Max	CTR @ 10mA I_F (%)		BV_{CEO} (V) Min	BV_{ECO} (V) Min	t_{ON}/t_{OFF} (µs) Max	V_{ISO} AC_{RMS} (V) 1 Minute
		Min	Max				
Phototransistor Output (No Base Connection), DC Sensing Input							
CNX82A.W	1.5	40	250	50	7	3 / 3	5300
CNY17F-1	1.65	40	80	70	7	2 / 3	5300
CNY17F-2	1.65	63	125	70	7	2 / 3	5300
CNY17F-3	1.65	100	200	70	7	2 / 3	5300
CNY17F-4	1.65	160	320	70	7	2 / 3	5300
MOC8101	1.5	50	80	30	7	2 / 3	5300
MOC8102	1.5	73	117	30	7	2 / 3	5300
MOC8103	1.5	108	173	30	7	2 / 3	5300
MOC8104	1.5	160	256	30	7	2 / 3	5300
MOC8105	1.5	65	133	30	7	2 / 3	5300
MOC8106	1.5	50	150	70	7	2 / 3	5300
MOC8107	1.5	100	300	70	7	2 / 3	5300
MOC8108	1.5	250	600	70	7	2 / 3	5300
MOC8111	1.65	20	–	70	7	6 / 5.5	5300
MOC8112	1.65	50	–	70	7	6 / 5.5	5300
MOC8113	1.65	100	–	70	7	6 / 5.5	5300
SL5582.W	1.5	40	320	50	7	–	5300

Optocouplers — 6-Pin DIP (Continued)

Products	I_{FT} (mA) Max	V_{TM}(V) Max	V_{DRM} (V) Min	I_H (µA) Typ	I_{DRM} (nA) Max	V_{ISO} AC_{RMS} (V) 1 Minute
Random Phase Triac Driver Output, DC Threshold Sensing Input						
MOC3010-M	15	3	250	100	100	4200
MOC3011-M	10	3	250	100	100	4200
MOC3012-M	5	3	250	100	100	4200
MOC3020-M	30	3	400	100	100	4200
MOC3021-M	15	3	400	100	100	4200
MOC3022-M	10	3	400	100	100	4200
MOC3023-M	5	3	400	100	100	4200
MOC3051-M	15	2.5	600	280	100	4200
MOC3052-M	10	2.5	600	280	100	4200

Products	I_{FT} (ON) (mA) Max	I_{FT} (OFF) (mA) Max	V_{CC} (V) Max	V_{OL} (V) Max	$I_{CC(ON)}$ (mA) Max	V_{ISO} AC_{RMS} (V) 1 Minute
Schmitt Trigger Output, DC Threshold Sensing Input						
H11L1-M	1.6	0.3	15	0.4	5	4200
H11L2-M	10	0.3	15	0.4	5	4200
H11L3-M	5	0.3	15	0.4	5	4200
H11N1-M	3.2	0.3	–	0.5	10	4200
H11N2-M	5	0.3	–	0.5	10	4200
H11N3-M	10	0.3	–	0.5	10	4200

Products	I_{FT} (mA) Max	V_{TM} (V) Max	V_{DRM} (V) Max	dv/dt (V/µs) Min	I_{DRM1} (nA) Max	V_{ISO} AC_{RMS} (V) 1 Minute
Zero Crossing Triac Driver Output, DC Threshold Sensing Input						
MOC3031-M	15	3	250	1000	100	4200
MOC3032-M	10	3	250	1000	100	4200
MOC3033-M	5	3	250	1000	100	4200
MOC3041-M	15	3	400	1000	100	4200
MOC3042-M	10	3	400	1000	100	4200
MOC3043-M	5	3	400	1000	100	4200
MOC3061-M	15	3	600	600	500	4200
MOC3062-M	10	3	600	600	500	4200
MOC3063-M	5	3	600	600	500	4200
MOC3081-M	15	3	800	600	500	4200

Optocouplers — 6-Pin DIP (Continued)

Products	I_{FT} (mA) Max	V_{TM} (V) Max	V_{DRM} (V) Max	dv/dt (V/µs) Min	I_{DRM1} (nA) Max	V_{ISO} AC_{RMS} (V) 1 Minute
Zero Crossing Triac Driver Output, DC Threshold Sensing Input (Continued)						
MOC3082-M	10	3	800	600	500	4200
MOC3083-M	5	3	800	600	500	4200
MOC3162-M	10	3	600	1000	100	4200
MOC3163-M	5	3	600	1000	100	4200

Optocouplers — 8-Pin DIP

Products	CTR @ 16 mA I_F (%)		V_{OL} (V) Max	I_{CCL} (µA) Max	t_{PHL}/t_{PLH} (µs) Max	CMR (kV/µs) CM_H/CM_L Min	V_{ISO} AC_{RMS} (V) 1 minute
	Min	Max					
1 Mbit/s High-Speed Transistor Output, DC Sensing Input							
6N135	7	50	0.4	200	1.5 / 1.5	–	2500
6N136	19	50	0.4	200	0.8 / 0.8	–	2500
FOD250L	15	50	0.3	200	1 / 1	5 / 5	5000
HCPL-2503	12	–	0.4	200	0.8 / 0.8	–	2500
HCPL-4502	19	50	0.4	200	0.8 / 0.8	–	2500
HCPL4503M	19	50	0.5	200	0.8 / 0.8	15 / 15	5000
1 Mbit/s High-Speed Transistor Output (Dual Channel), DC Sensing Input							
HCPL-2530	7	50	0.5	0	1.5 / 1.5	–	2500
HCPL-2531	19	50	0.5	0	0.8 / 0.8	–	2500

Products	I_{FT} (mA) Max	V_{OL} (V) Max	I_{CCL} (mA) Max	t_{PHL}/t_{PLH} (ns) Max	CMR (kV/µs) CM_H/CM_L Min	V_{ISO} AC_{RMS} (V) 1 minute
10 Mbit/s High-Speed Logic Gate Output, DC Threshold Sensing Input						
6N137	5	0.6	13	75 / 75	–	2500
HCPL-2601	5	0.6	13	75 / 75	5 / 5	2500
HCPL-2611	5	0.6	13	75 / 75	10 / 10	2500

Products	I_{FT} (mA) Max	V_{OL} (V) Max	I_{CCH} (mA) Max	I_{CCL} (mA) Max	t_{PHL}/t_{PLH} (ns) Max	CMR (kV/µs) CM_H/CM_L Min	V_{ISO} AC_{RMS} (V) 1 minute
10 Mbit/s High-Speed Logic Gate Output (Dual Channel), DC Threshold Sensing Input							
HCPL-2630	5	0.6	15	21	75 / 75	–	2500
HCPL-2631	5	0.6	15	21	75 / 75	5 / 5	2500

Products	I_{TH+} (mA) Max	I_{TH-} (mA) Max	V_{TH+} (DC) (V) Max	V_{TH-} (DC) (V) Max	V_{TH+} (AC) (V) Max	V_{TH-} (AC) (V) Max	V_{ISO} AC_{RMS} (V) 1 minute
AC/DC to Logic Interface, AC Threshold Sensing Input							
HCPL-3700	3.11	1.62	4.05	2.86	5.5	4.2	2500

Products	CTR @ 1.6 mA I_F (%)		V_{OL} (V) Max	I_{OH} (µA) Max	t_{PHL}/t_{PLH} (µs) Max	CMR (kV/µs) CM_H/CM_L Min	V_{ISO} AC_{RMS} (V) 1 minute
	Min	Max					
High-Gain Split Photodarlington Output, Low Current DC Sensing Input							
6N138	300	–	0.4	1.5	10 / 35	1 / 1	2500
6N139	500	–	0.4	1.5	25 / 60	1 / 1	2500
FOD270L	400	5000	0.4	1.5	30 / 90	1 / 1	2500

Optocouplers — 8-Pin DIP (Continued)

Products	CTR @ 1.6 mA I_F (%)		V_{OL} (V) Max	I_{CCL} (mA) Max	t_{PHL}/t_{PLH} (µs) Max	CMR (kV/µs) CM_H/CM_L Min	V_{ISO} AC_{RMS} (V) 1 minute
	Min	Max					
High-Gain Split Photodarlington Output (Dual Channel), Low Current DC Sensing Input							
HCPL-2730	300	–	0.4	3	20 / 35	1 / 1	2500
HCPL-2731	500	–	0.4	3	20 / 35	1 / 1	2500

Logic Output, AC Threshold Sensing Input

Products	$I_{(ON)}$ RMS (mA) Min	$I_{(OFF)}$ RMS (mA) Min	V_{CC} (V) Max	$V_{I(ON)}$ RMS (V) Min	$V_{I(OFF)}$ RMS (V) Max	I_{OH} (µA) Max	V_{ISO} AC_{RMS} (V) 1 Minute
MID400	4	0.15	7	90	5.5	1	2500

Logic Output, DC Sensing Input

Products	$IF_{(ON)}$ (mA) Min	V_{CC} (V) Max	I_{CCH} (mA) Max	I_{CCL} (mA) Max	t_{PHL}/t_{PLH} (ns) Max	V_{ISO} AC_{RMS} (V) 1 Minute
FOD2200	1.6	20	6	7.5	300 / 300	5000

Optically Isolated Error Amplifier, DC Sensing Input with Voltage Reference

Products	V_{REF} (V) Min	V_{REF} (V) Max	CTR @ 10 mA I_F (%)		BV_{CEO} (V) Min	V_{ISO} AC_{RMS} (V) 1 Minute
			Min	Max		
FOD2711	1.221	1.259	100	200	70	5000
FOD2741A	2.482	2.508	100	200	70	5000
FOD2741B	2.470	2.520	100	200	70	5000
FOD2741C	2.450	2.550	100	200	70	5000
FOD2743A	2.482	2.508	100	200	70	5000
FOD2743B	2.470	2.520	100	200	70	5000
FOD2743C	2.450	2.550	100	200	70	5000

Phototransistor Output, DC Sensing Input

Products	CTR @ 10mA I_F (%)		BV_{CEO} (V) Min	V_{CE}(SAT) (V) Min	BV_{ECO} (V) Min	t_{ON}/t_{OFF} (µs) Typ	V_{ISO} AC_{RMS} (V) 1 Minute
	Min	Max					
MCT6	20	–	30	0.4	6	5 / 25	2500
MCT61	50	–	30	0.4	6	5 / 25	2500
MCT62	100	–	30	0.4	6	5 / 25	2500
MCT9001	50	600	55	0.4	7	3 / 3	2500

Optocouplers — 8–Pin SOIC

1 Mbit/s High–Speed Transistor Output, DC Sensing Input							
Products	**CTR @ 16mA I_F (%)**		**V_{OL} (V) Max**	**I_{CCL} (µA) Max**	**t_{PHL}/t_{PLH} (µs) Max**	**CMR (kV/µs) CM_H/CM_L Min**	**V_{ISO} AC_{RMS} (V) 1 Minute**
	Min	**Max**					
FOD050L	15	50	0.3	200	1 / 1	5 / 5	2500
HCPL0452	19	50	0.4	200	0.8 / 0.8	1 / 1	2500
HCPL0453	19	50	0.4	200	0.8 / 0.8	15 / 15	2500
HCPL0500	7	50	0.4	200	1.5 / 1.5	1 / 1	2500
HCPL0501	19	50	0.4	200	0.8 / 0.8	1 / 1	2500
1 Mbit/s High–Speed Transistor Output (Dual Channel), DC Sensing Input							
FOD053L	15	50	0.3	400	1 / 1	5 / 5	2500
HCPL0530	7	50	0.5	400	1.5 / 1.5	1 / 1	2500
HCPL0531	19	50	0.4	400	0.8 / 0.8	1 / 1	2500
HCPL0534	7	50	0.5	400	1.5 / 1.5	15 / 15	2500

10 Mbit/s High–Speed Logic Gate Output, DC Threshold Sensing Input						
Products	**I_{FT} (mA) Max**	**V_{OL} (V) Max**	**I_{CCL} (mA) Max**	**t_{PHL}/t_{PLH} (ns) Max**	**CMR (kV/µs) CM_H/CM_L Min**	**V_{ISO} AC_{RMS} (V) 1 Minute**
HCPL-0600	5	0.6	13	75 / 75	–	2500
HCPL-0601	5	0.6	13	75 / 75	5 / 5	2500

High–Gain Split Photodarlington Output, Low Current DC Sensing Input							
Products	**CTR @ 1.6mA I_F (%)**		**V_{OL} (V) Max**	**I_{CCL} (mA) Max**	**t_{PHL}/t_{PLH} (µs) Max**	**CMR (kV/µs) CM_H/CM_L Min**	**V_{ISO} AC_{RMS} (V) 1 Minute**
	Min	**Max**					
FOD070L	400	5000	0.4	1.5	30 / 90	1 / 1	2500
FOD073L	400	5000	0.4	3	30 / 90	1 / 1	2500
HCPL-0700	300	2600	0.4	1.5	10 / 35	1 / 1	2500
HCPL-0701	500	2600	0.4	1.5	25 / 60	1 / 1	2500
HCPL-0730	300	2600	0.4	3	20 / 35	1 / 1	2500
HCPL-0731	500	2600	0.4	3	20 / 35	1 / 1	2500

Optocouplers — 8–Pin SOIC (Continued)

Optically Isolated Error Amplifier, DC Sensing Input with Voltage Reference						
Products	**V_{REF} (V) Min**	**V_{REF} (V) Max**	**CTR @ 10mA I_F (%)**		**BV_{CEO} (V) Min**	**V_{ISO} AC_{RMS} (V) 1 Minute**
			Min	**Max**		
FOD2712	1.221	1.259	100	200	70	2500
FOD2742A	2.482	2.508	100	200	70	2500
FOD2742B	2.470	2.520	100	200	70	2500
FOD2742C	2.450	2.550	100	200	70	2500

Photodarlington Output, DC Sensing Input							
Products	**CTR @ 1mA I_F (%)**		**BV_{CEO} (V) Min**	**$V_{CE(SAT)}$ (V) Max**	**BV_{ECO} (V) Min**	**t_{ON}/t_{OFF} (µs) Max**	**V_{ISO} AC_{RMS} (V) 1 Minute**
	Min	**Max**					
MOC223-M	500	–	30	1	7	3.5 / 95	3000

Products	CTR @ 1mA I_F (%)		BV_{CEO} (V) Min	BV_{CBO} (V) Min	BV_{ECO} (V) Min	t_{ON}/t_{OFF} (µs) Max	V_{ISO} AC_{RMS} (V) 1 Minute
	Min	**Max**					
Photodarlington Output (Dual Channel), DC Sensing Input							
MOCD223-M	500	–	30	–	7	3.5 / 95	3000
Phototransistor Output, AC Sensing Input							
MOC256-M	20	–	30	70	5	–	3000

Products	CTR @ ≤ 10mA I_F (%)		BV_{CEO} (V) Min	BV_{CBO} (V) Min	BV_{ECO} (V) Min	t_{ON}/t_{OFF} (µs) Max	V_{ISO} AC_{RMS} (V) 1 Minute
	Min	**Max**					
Phototransistor Output, DC Sensing Input							
MOC205-M	40	80	70	–	7	3 / 2.8	2500
MOC206-M	63	125	70	–	7	3 / 2.8	2500
MOC207-M	100	200	70	–	7	3 / 2.8	2500
MOC208-M	40	125	70	–	7	3 / 2.8	2500
MOC211-M	20	–	30	70	7	7.5 / 5.7	2500
MOC212-M	50	–	30	70	7	7.5 / 5.7	2500
MOC213-M	100	–	30	70	7	7.5 / 5.7	2500
MOC215-M	20	–	30	–	7	7.5 / 5.7	2500
MOC216-M	50	–	30	–	7	7.5 / 5.7	2500
MOC217-M	100	–	30	–	7	7.5 / 5.7	2500

Optocouplers — 8–Pin SOIC (Continued)

Products	CTR @ ≤ 10mA I_F (%)		BV_{CEO} (V) Min	BV_{CBO} (V) Min	BV_{ECO} (V) Min	t_{ON}/t_{OFF} (µs) Max	V_{ISO} AC_{RMS} (V) 1 Minute
	Min	Max					
Phototransistor Output (Dual Channel), DC Sensing Input							
MOCD207-M	100	200	70	–	7	3 / 2.8	2500
MOCD208-M	40	125	70	–	7	3 / 2.8	2500
MOCD211-M	20	–	30	–	7	7.5 / 5.7	2500
MOCD213-M	100	–	70	–	7	3 / 2.8	2500
MOCD217-M	100	–	30	–	7	7.5 / 5.7	2500

Optically Coupled Solid State Relays

Products	I_F (ON) (mA) Max	I_F (OFF) (mA) Max	V_{OPR} (V_{DC} or $V_{AC(PK)}$) Max	I_L (mA) Max	R_{ON} (Ω) Max	I_{LMT} (mA) Max	V_{ISO} AC_{RMS} (V) 1 minute
DC Threshold Sensing Input							
HSR312	2	0.4	250	190 320	10 3	NA NA	4000
HSR312L	2	0.4	250	170 300	15 4.25	300 560	4000
HSR412	3	0.4	400	140 210	27 7	NA NA	4000
HSR412L	3	0.4	400	120 200	35 9	220 440	4000

Single Channel MICROCOUPLER™

Products	V_F (V) Max	CTR @ 1mA I_F (%)		BV_{CEO} (V) Min	BV_{ECO} (V) Min	t_R/t_F (µs) Max	V_{ISO} AC_{RMS} (V) 1 second
		Min	Max				
Phototransistor Output, DC Sensing Input							
FODB100	1.5	100	–	75	7	1 / 5	2500
FODB101	1.5	100	200	75	7	1 / 5	2500
FODB102	1.5	150	300	75	7	1 / 5	2500

Infrared

PDF links for all the packaging information is at: http://www.fairchildsemi.com/products/opto/packaging/ir/

Package Description	Packaging Standards			
	Bag (Qty)	Tube (Qty)	Tape on Ammopack	Tape & Reel
PLCC-2 Detector	1000			2000
PLCC-2 Diode	1000			2000
Reflective Arrowhead with Dust Cover	50			
Reflective Arrowhead with Dust Cover, Wires	20			
Reflective Arrowhead without Dust Cover	50			
Reflective Arrowhead without Dust Cover, Wires	20			
Reflective Focusing Sensor PCB Mount		50		
Reflective Non-focusing Sensor PCB Mount	100			
Reflective Surface Mount Package				2000
Sidelooker Detector	500			2000
Sidelooker Detector (No Lens)	1000			2000
Sidelooker Diode	500			2000
Sidelooker OPTOLOGIC®	500			2000
Slotted Switch 5mm Gap, 9mm Lead Spacing		50		
Slotted Switch 5mm Gap, 10mm Lead Spacing		50		
Slotted Switch 8mm Gap		50		
Slotted Switch H21		50		
Slotted Switch H22		50		
Slotted Switch High Profile		50		
Slotted Switch Horizontal with Wires	50			
Slotted Switch Logic 5mm		50		
Slotted Switch Logic H21		50		
Slotted Switch Logic H22		50		
Slotted Switch Logic with Wires	50			
Slotted Switch MOC		50		
Slotted Switch QVA		50		
Slotted Switch QVB		50		
Slotted Switch Wide Gap		50		
Surface Mount Opto Interrupter QCK		25		300
Surface Mount Switch 2mm Gap				800
Thin Sidelooker Detector	500			2000
Thin Sidelooker Diode	500			2000
T- 3/4 (2mm) Detector	1000			1000
T- 3/4 (2mm) Diode	1000			1000
T-1 (3mm) Detector	250		Tape on Ammopack	2000
T-1 (3mm) Diode	250		Tape on Ammopack	2000
T-1 3/4 (5mm) Detector	250		Tape on Ammopack	1200

Optoelectronic (Continued)

Infrared (Continued)

PDF links for all the packaging information is at: http://www.fairchildsemi.com/products/opto/packaging/ir/

Package Description	Packaging Standards			
	Bag (Qty)	Tube (Qty)	Tape on Ammopack	Tape & Reel
T-1 3/4 (5mm) Detector, Reverse Polarity	250		Tape on Ammopack	1200
T-1 3/4 (5mm) Diode	250		Tape on Ammopack	1200
TO-18 Detector (Convex Lens)	500			
TO-18 Detector (Flat Lens)	500			
TO-18 Detector (Plastic)	250		Tape on Ammopack	1200
TO-18 OPTOLOGIC®	500			
TO-46 Package (Convex Lens)	500			
TO-46 Package (Flat Lens)	500			
TO-46 (Plastic) Diode	250		Tape on Ammopack	1200
TO-92 Detector Package	1000			2000

Surface Mount LED Lamp

PDF links for all the packaging information is at: http://www.fairchildsemi.com/products/opto/packaging/lamps/

Package Name	Tape and Reel (Qty)	Package Code
0603 0.8mm Height	2000	TR
0603 0.6mm Height	2000	TR
0606	2000	TR
Right Angle	2000	TR
0805	2000	TR
1206	2000	TR
1206 Inner Lens	2000	TR
1206 Reverse Mount	2000	TR
1210	2000	TR
1.8mm Dome Lens	2000	TR
PLCC-2	2000	TR
PLCC-4	2000	TR

Optoelectronic (Continued)

Optocoupler

PDF links for all the packaging information is at: http://www.fairchildsemi.com/products/opto/packaging/oi/

Package Name	Color	Tube (Qty)	Tape and Reel (Qty)	Package Code	Minimum Isolation Distance (mm)	Isolation Voltage (VRMS, 1 min)
Single Channel Microcoupler	N/A	N/A	3,000	C	0.45	2500 VRMS (1 sec)
4-Pin Half Pitch Mini-Flat	White	150	500 (R1), 2500 (R2)	M1	0.5	2500
4-Pin Full Pitch Mini-Flat	White	100	500 (R1), 2500 (R2)	M	0.5	3750
4-Pin Surface Mount Dual In-line	Black	100 (S)	1000 (SD)	T	1.0	5300
4-Pin Through Hole Dual In-line	Black	100	N/A	T	1.0	5300
4-Pin 0.4" Lead Spacing Dual In-line	Black	100	N/A	T	1.0	5300
5-Pin Mini-Flat	White	100	500 (R1), 2500 (R2)	M	0.5	3750
6-Pin Surface Mount Dual In-line	White	50 (S)	1000 (SR2)	Q	0.5	4170
6-Pin Through Hole Dual In-line	White	50	N/A	Q	0.5	4170
6-Pin 0.4" Lead Spacing Dual In-line	White	50	N/A	Q	0.5	4170
6-Pin Surface Mount Dual In-line (HSR)	White	50 (S)	1000 (SR2)	A	0.7	4170
6-Pin Through Hole Dual In-line (HSR)	White	50	N/A	A	0.7	4170
6-Pin Surface Mount Dual In-line	Black	50 (S)	1000 (SR2)	K	1.0	5300
6-Pin Through Hole Dual In-line	Black	50	N/A	K	1.0	5300
6-Pin 0.4" Lead Spacing Dual In-line	Black	50	N/A	K	1.0	5300
8-Pin Small Outline	White	50	500 (R1), 2500 (R2)	S	0.4	2500
8-Pin Small Outline (FOD27X2)	White	50	500 (R1), 2500 (R2)	S	0.5	2500
8-Pin Surface Mount Dual In-line	Black	50 (S)	1000 (SD)	T1	0.6	2500
8-Pin Through Hole Dual In-line	Black	50	N/A	T1	0.6	2500
8-Pin 0.4" Lead Spacing Dual In-line	Black	50	N/A	T1	0.6	2500
8-Pin Surface Mount Dual In-line (MCT6X/9XXX)	Black	50 (S)	1000 (SD)	E	1.0	5300
8-Pin Through Hole Dual In-line (MCT6X/9XXX)	Black	50	N/A	E	1.0	5300
8-Pin 0.4" Lead Spacing Dual In-line (MCT6X/9XXX)	Black	50	N/A	E	1.0	5300
8-Pin Surface Mount Dual In-line	White	50 (S)	1000 (SD)	B	0.5	5000
8-Pin Through Hole Dual In-line	White	50	N/A	B	0.5	5000
8-Pin 0.4" Lead Spacing Dual In-line	White	50	N/A	B	0.5	5000

Optoelectronic

For ordering information regarding other Optoelectronics product families, please refer to the datasheet of the product of interest at http://www.fairchildsemi.com/products/opto/opto_byfunction.html.

Optocoupler Devices

FOD Series

FOD 27 4 1 A

Optocoupler Device
Device Designator
Die
Package Designator Suffix
1 = DIP
2= SOIC-8
Tolerance Level
A = 0.5%
B = 1%
C = 2%

H11A/HMA/HMHA/MCT/MOC/SL/TIL/CNX/CNY/4N Series

H11A 617 A

Transistor Family
H11A
HMA
HMHA
MCT
MOC
SL
TIL
CNX
CNY
4N
Device Designator
CTR Rank

H11B/MOC80XX/4N/TIL Series

H11B 1

Darlington Family
H11B
MOC80XX
4N
TIL
Device Designator

H11C/4N Series

H11C 1

Photo SCR Family
H11C
4N
Device Designator

H11D/4N Series

H11D 1

High Voltage Transistor Family
H11D
4N
Device Designator

H11F Series

H11F 1

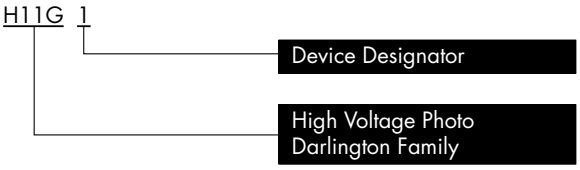
Bilateral Analog FET Family
Device Designator

Optoelectronic (Continued)

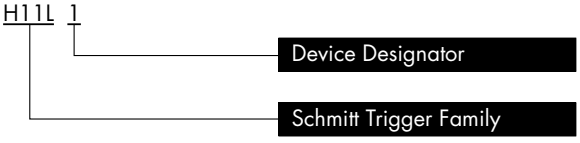
For ordering information regarding other Optoelectronics product families, please refer to the datasheet of the product of interest at http://www.fairchildsemi.com/products/opto/opto_byfunction.html.

Optocoupler Devices (Continued)

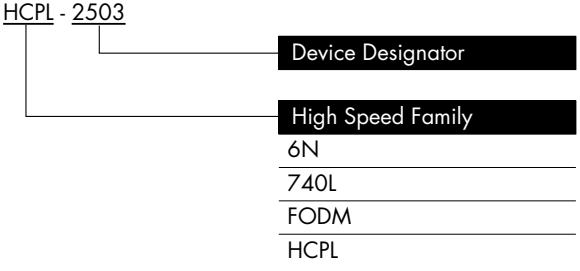
H11G Series



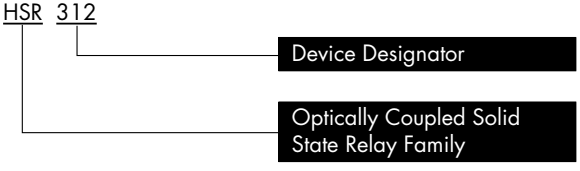
H11L Series



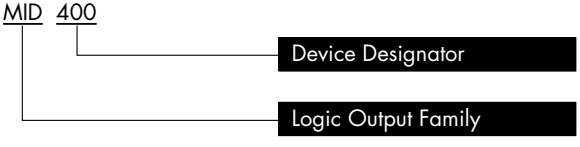
6N/740L/FODM/HCPL Series



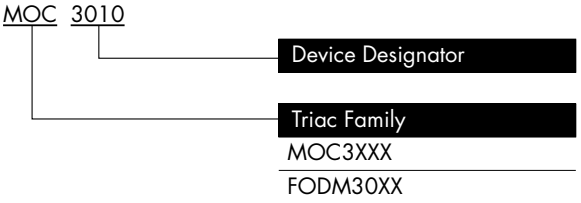
HSR Series



MID Series



MOC3XXX/FODM30XX Series



Optoelectronic (Continued)

For ordering information regarding other Optoelectronics product families, please refer to the datasheet of the product of interest at http://www.fairchildsemi.com/products/opto/opto_byfunction.html.

Infrared Devices

QECXXX Series

QECXXX C 6 R 0

Category Code

The category code for Infrared (IR) products is always "0"

Packaging Code

Code	Packaging	Quantity (T-1)	Quantity (T-1 3/4)
R	Reel	2,000	1,200
A	Ammopack	1,500	1,200

Height Code

Code	Height (H)	Note
3	18.5mm	5
4	20.5mm	5
6	24.5mm	5

Lead Spacing Code

Code	Package
A	T-1 3/4
C	T-1
E	T&R

Standard Product Part Number

QEBXXX Series

QEBXXX G R

Packaging Code

Code	Packaging	Quantity (Code GR, YR, ZR)
R	Tape and Reel	1,000/Reel

Lead Form Code

Code	Lead Type	Note
G	Gullwing	2
Y	Yoke	2
Z	Z-Bend	2

Standard Product Part Number

Notes:

1. Automatic PCB assembly for most T-1 and T-1 3/4 leads with radial insertion machines.
2. Meets ANSI/EIA Standard RS-468.
3. The maximum number of consecutive missing lamps is three.
4. Standard 0.10 (2.54) lead spacing.
5. Height (H) is measured from center of tape to base of flange.

Optoelectronic (Continued)

For ordering information regarding other Optoelectronics product families, please refer to the datasheet of the product of interest at http://www.fairchildsemi.com/products/opto/opto_byfunction.html.

LED Lamps/Display Devices

QTLP Series

QTLP 6XXC TR

Shipping Mode	
TR	Tape & Reel

Part Series	
	600
	601
	603
	606
	610
	611
	613
	614
	630
	650
	651
	652
	653
	660
	670
	671
	Color
R	Red
E	Orange
O	Yellow-Orange
Y	Yellow
AG	Yellow-Green
IG	True-Green
EB	Blue
IW	White

Fairchild QTLP Series

FOLXXXTR Series

FOL XXX TR

Shipping Mode	
TR	Tape & Reel

Part Series	
	215
	216
	675
	1313
	Color
R	Red
G	Green
B	Blue
W	White
IW	White
	And all other colors

Fairchild Optoelectronics LED

FOL XXXCEB TR

Shipping Mode	
TR	Tape & Reel

Part Series	
	425K
	425C
	515
	516
	598
	625
	Color
R	Red
G	True Green
B	Blue
W	White

Fairchild Optoelectronics Lamp Flash

Fairchild Semiconductor's Design Center offers a wide range of design tools including online selection and simulation tools, software downloads, and developer kits. Details can be found below. The web site for this information is http://www.fairchildsemi.com/designcenter/

Design Tools

FETBench

http://www.transim.com/fairchild/fairchild_index.html
(Registration required)

MOSFET design workbench featuring WebSIM™ and other resources for the design engineer

Power Factor Correction (PFC) Toolkit

http://www.fairchildsemi.com/designcenter/pfc
(Registration required)

This online toolkit contains tutorials, topology recommendations, product selection tools as well as other design recommendations for PFC applications.

Power Supply Design Toolkit

http://www.fairchildsemi.com/designcenter/acdc
(Registration required)

This online tool features tutorials, selection tools, and design aids specifically addressing AC/DC designs. Included is a step by step design tool using Fairchild Power Switches (FPS™).

Synchronous buck MOSFET loss calculations with Excel Model (.pdf)

http://www.fairchildsemi.com/designcenter/

Developer Tools

ACEx™ Developer Tool Kit

http://www.fairchildsemi.com/products/micro/acex_dtk.html

Models and Simulation Tools

http://www.fairchildsemi.com/models

Fairchild provides a full range of simulation resources including SPICE and IBIS models, as well as simulation tools.

Sample Code

ACEx™ sample code downloads

http://www.fairchildsemi.com/products/micro/sw/sample_code.html

Download code to assist in your designs with ACEx™

Training & Seminars

Archived webcasts

http://www.fairchildsemi.com/power/pwrsemwebcast03.html

Contents:

- Flyback Converters – Fairchild Power Switch (FPS™)
- Practical aspects of feedback control
- Power Factor Correction
- DC-DC Solutions (Control)
- High-Voltage Discrete Technology
- DC-DC Solutions (MOSFETs)
- Motor Solutions

Quality System

The success of Fairchild is dependent upon the level of service that we can provide to our customers. One of the ways that we provide this high level of service is through a comprehensive quality system. Fairchild's Quality Strategy stresses four key areas:

- Designing In Quality
- Building In Quality
- Customer Service
- Continuous Improvement

This quality system bolsters Fairchild's strategic initiatives of product innovation, cost-effective manufacturing and superior customer service.

Fairchild has a strong focus on *Supplier Quality.* Quality systems and programs are in place for all Fairchild suppliers worldwide including direct raw materials, fabrication, assembly and test subcontractors. These include a comprehensive rating system, controlled supplier lists, documented qualification procedures and environmental standards specifications.

Fairchild is committed to *Development Quality.* Development processes are based on the QS9000 Advanced Product Quality Planning (APQP) methodology. APQP is a concurrent engineering process that examines the processes, products and technologies to assure the end products work optimally. These developmental processes include a phase review system wherein at each point in the process, there is an opportunity to decide whether to continue or discontinue development as appropriate. Integral to the APQP methodology is the use of Failure Mode and Effects Analysis (FMEA) to examine the various ways that product, process or equipment failures can occur and develop control plans to proactively prevent the failures.

Fairchild's *Manufacturing Quality* systems are founded on the principles of Built-In Quality. Quality is an integral part of every step in the manufacturing process, starting with the development process itself. Fairchild's Manufacturing and Engineering groups make extensive use of statistical methods such as Design of Experiments to determine optimal process parameters and Statistic Process Control (SPC) to monitor the process performance. Continuous Improvement efforts use information available from sources such as customers, process control monitors, reliability testing and final test operations to generate action plans that will push the factories ever closer to quality perfection.

Service Quality is not just an afterthought at Fairchild. It is a major part of our quality system. An integral part of Fairchild's Service Quality is the Customer Quality Engineering (CQE) group, which is a global organization of engineers dedicated to addressing all process, product or service quality issues that customers may have. CQE also acts as the customer advocate within Fairchild and is available to support customers with qualification information, surveys, questionnaires and other inquiries. Additional service support is available through a new virtual organization of customer quality champions who are trained and certified to provide direct customer support from each of Fairchild's manufacturing sites. Fairchild's service quality includes fully equipped failure analysis labs at all manufacturing locations to test customer returned samples.

The Future

All of Fairchild's manufacturing sites are in the process of enhancing their quality systems to meet the requirements of the TS-16949 standard. Quality systems based on this standard have a very strong link to the associated business processes. Another part of our future direction is an active focus on environmental quality. With the billions of parts that semiconductor manufacturers ship, it is imperative that these products do not contaminate the environment. Fairchild is contributing to this effort through compliance to industry standards such ISO-14001, conversion to lead-free plating, elimination of hazardous or restricted substances in our products and minimization of waste from our manufacturing processes.

We will continue to improve our processes, products and services to provide customers with design solutions that offer a true competitive advantage. This drive for continuous improvement is ingrained in our culture and a key to the future success of Fairchild Semiconductor and our customers.