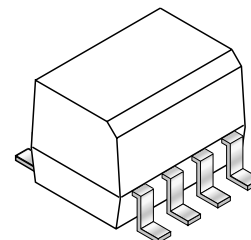


DESCRIPTION

The MOCD207M/MOCD208M consist of two silicon phototransistors optically coupled to two GaAs infrared LEDs. These devices are constructed in a small outline surface mount package which conforms to the standard SOIC-8 footprint.

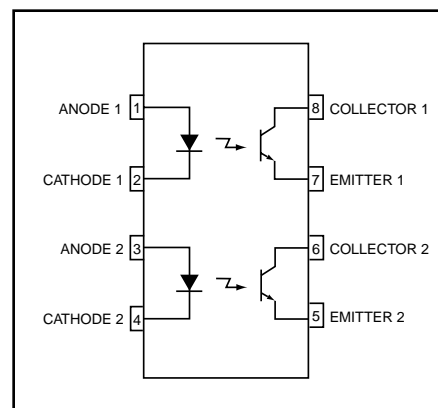


FEATURES

- Dual Channel Optocoupler
- Convenient Plastic SOIC-8 Surface Mountable Package Style
- Two channels in one compact surface mount package
- Closely Matched Current Transfer Ratios to Minimize Unit-to-Unit Variation
- Minimum $V_{(BR)CEO}$ of 70 Volts Guaranteed
- Standard SOIC-8 Footprint, with 0.050" Lead Spacing
- Compatible with Dual Wave, Vapor Phase and IR Reflow Soldering
- High Input-Output Isolation of 2500 Vac (rms) Guaranteed
- Meets U.L. Regulatory Requirements, File #E90700, Volume 2

APPLICATIONS

- Feedback control circuits
- Interfacing and coupling systems of different potentials and impedances
- General purpose switching circuits
- Monitor and detection circuits



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless otherwise specified)

Rating	Symbol	Value	Unit
EMITTER			
Forward Current - Continuous	I_F	60	mA
Forward Current - Peak (PW = 100 μs , 120 pps)	I_F (pk)	1.0	A
Reverse Voltage	V_R	6.0	V
LED Power Dissipation @ $T_A = 25^\circ\text{C}$	P_D	90	mW
Derate above 25°C		0.8	mW/ $^\circ\text{C}$
DETECTOR			
Collector-Emitter Voltage	V_{CEO}	70	V
Collector-Base Voltage	V_{CBO}	70	V
Emitter-Collector Voltage	V_{ECO}	7.0	V
Collector Current-Continuous	I_C	150	mA
Detector Power Dissipation @ $T_A = 25^\circ\text{C}$	P_D	150	mW
Derate above 25°C		1.76	mW/ $^\circ\text{C}$
TOTAL DEVICE			
Input-Output Isolation Voltage ^(1,2) (f = 60 Hz, 1 min. Duration)	V_{ISO}	2500	Vac(rms)
Total Device Power Dissipation @ $T_A = 25^\circ\text{C}$	P_D	250	mW
Derate above 25°C		2.94	mW/ $^\circ\text{C}$
Ambient Operating Temperature Range	T_A	-45 to +100	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-45 to +125	$^\circ\text{C}$
Lead Soldering Temperature (1/16" from case, 10 sec. duration)	T_L	260	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified) ⁽³⁾							
Parameter	Test Conditions	Symbol	Device	Min	Typ**	Max	Unit
EMITTER							
Input Forward Voltage	$I_F = 30\text{ mA}$	V_F	All	—	1.25	1.55	V
Reverse Leakage Current	$V_R = 6.0\text{ V}$	I_R	All	—	0.001	100	μA
Capacitance		C	All	—	18	—	pF
DETECTOR							
Collector-Emitter Dark Current	$V_{CE} = 10\text{ V}, T_A = 25^\circ\text{C}$	I_{CEO}	All	—	1.0	50	nA
	$V_{CE} = 10\text{ V}, T_A = 100^\circ\text{C}$	I_{CEO}	All	—	1.0	—	μA
Collector-Emitter Breakdown Voltage	$I_C = 100\ \mu\text{A}$	$V_{(BR)CEO}$	All	70	100	—	V
Emitter-Collector Breakdown Voltage	$I_E = 100\ \mu\text{A}$	$V_{(BR)ECO}$	All	7.0	10	—	V
Collector-Emitter Capacitance	$f = 1.0\text{ MHz}, V_{CE} = 0\text{ V}$	C_{CE}	All	—	7.0	—	pF
COUPLED							
Current Transfer Ratio, Collector to Emitter ⁽⁴⁾	$I_F = 10\text{ mA}, V_{CE} = 5\text{ V}$	CTR	MOCD207	100	150	200	%
			MOCD208	40	—	125	
	MOCD207		34	—	—		
	MOCD208		13	—	—		
Collector-Emitter Saturation Voltage	$I_C = 2.0\text{ mA}, I_F = 10\text{ mA}$	$V_{CE(sat)}$	All	—	—	0.4	V
Turn-On Time	$I_C = 2.0\text{ mA}, V_{CC} = 10\text{ V}, R_L = 100\ \Omega$	t_{on}	All	—	3.0	—	μs
Turn-Off Time	$I_C = 2.0\text{ mA}, V_{CC} = 10\text{ V}, R_L = 100\ \Omega$	t_{off}	All	—	2.8	—	μs
Rise Time	$I_C = 2.0\text{ mA}, V_{CC} = 10\text{ V}, R_L = 100\ \Omega$	t_r	All	—	1.6	—	μs
Fall Time	$I_C = 2.0\text{ mA}, V_{CC} = 10\text{ V}, R_L = 100\ \Omega$	t_f	All	—	2.2	—	μs
Isolation Surge Voltage ^(1,2)	$f = 60\text{ Hz}, t = 1\text{ min.}$	V_{ISO}	All	2500	—	—	Vac(rms)
Isolation Resistance ⁽²⁾	$V_{I-O} = 500\text{ V}$	R_{ISO}	All	10^{11}	—	—	Ω
Isolation Capacitance ⁽²⁾	$V_{I-O} = 0\text{ V}, f = 1\text{ MHz}$	C_{ISO}	All	—	0.2	—	pF

** Typical values at $T_A = 25^\circ\text{C}$

NOTE:

1. Input-Output Isolation Voltage, V_{ISO} , is an internal device dielectric breakdown rating.
2. For this test, Pins 1, 2, 3 and 4 are common and Pins 5, 6, 7 and 8 are common.
3. Always design to the specified minimum/maximum electrical limits (where applicable).
4. Current Transfer Ratio (CTR) = $I_C/I_F \times 100\%$.

Fig. 1 LED Forward Voltage vs. Forward Current

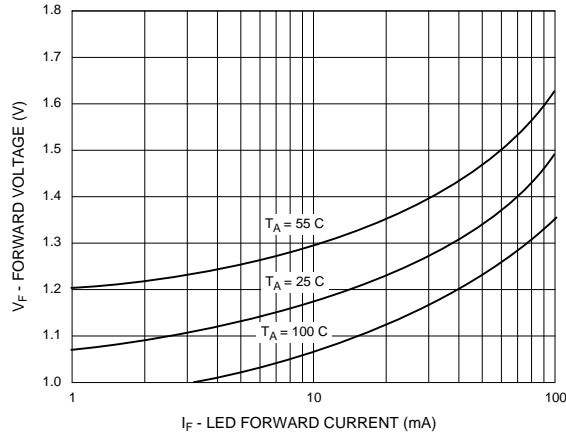


Fig. 2 Output Current vs. Input Current

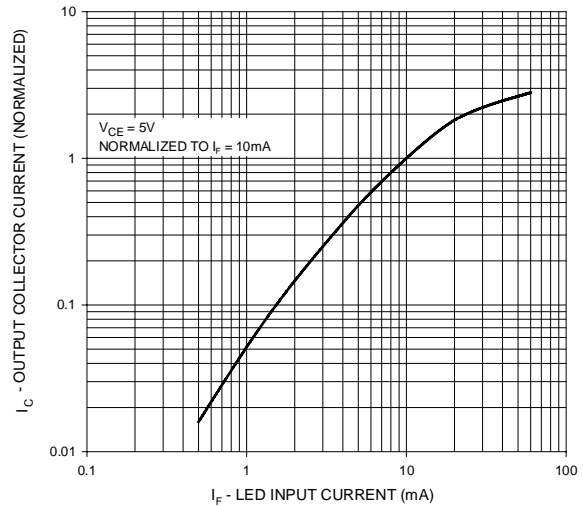


Fig. 3 Output Current vs. Ambient Temperature

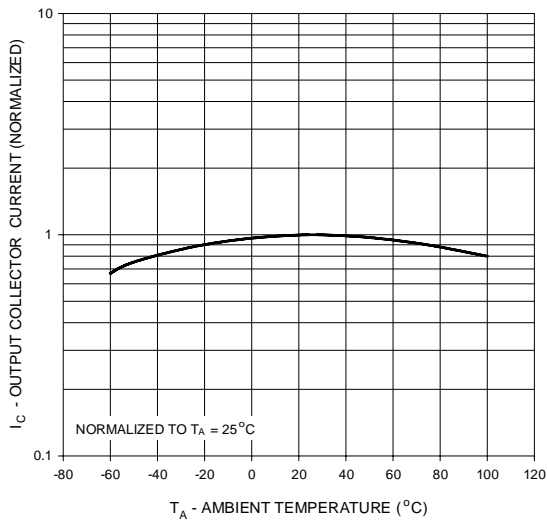


Fig. 4 Output Current vs. Collector - Emitter Voltage

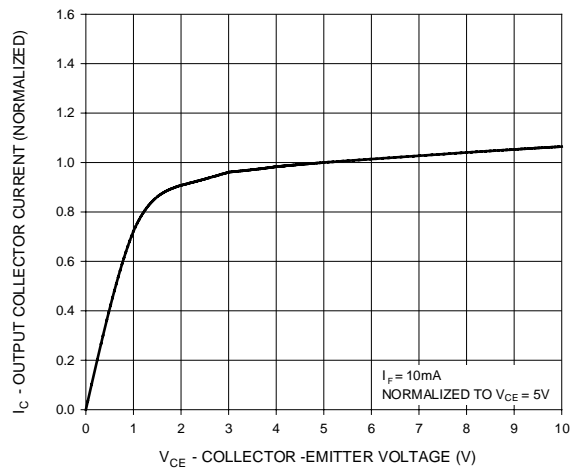
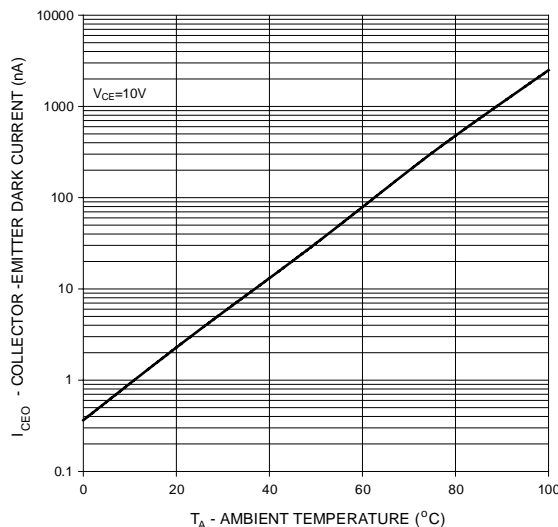
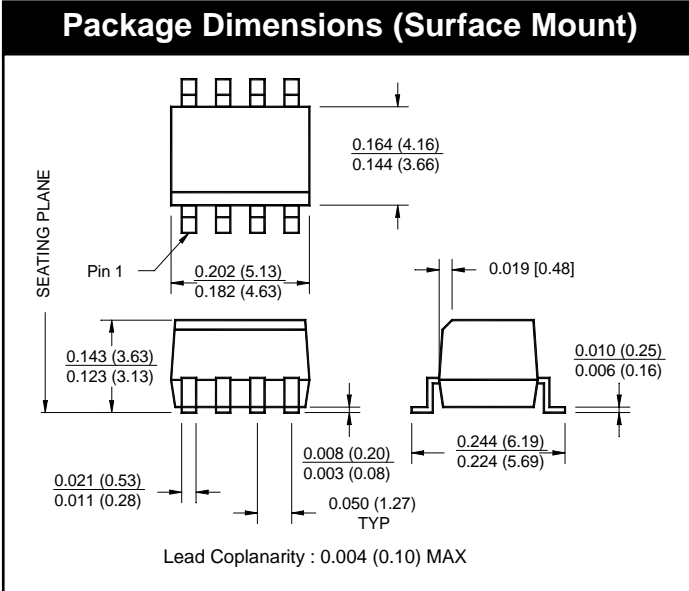


Fig. 5 Dark Current vs. Ambient Temperature



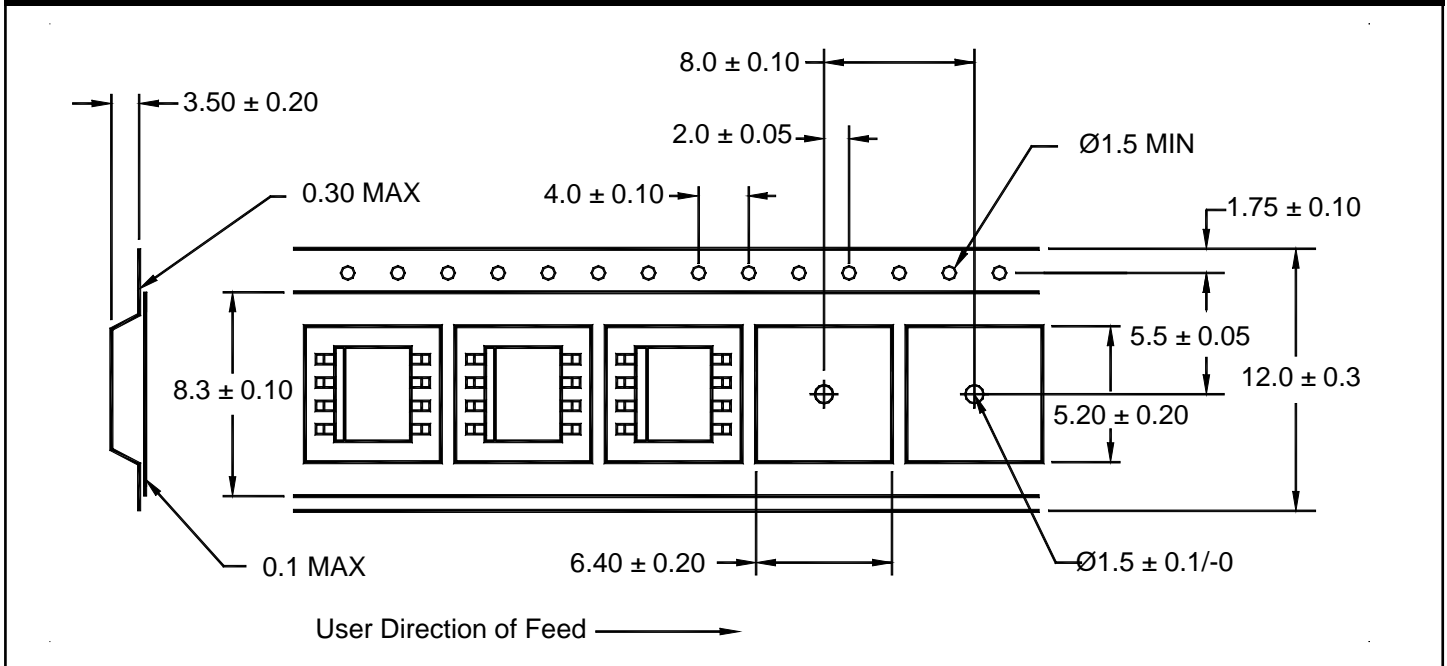
Package Dimensions (Surface Mount)



ORDERING INFORMATION

Option	Order Entry Identifier	Description
R1	R1	Tape and reel (500 units per reel)
R2	R2	Tape and reel (2500 units per reel)

QT Carrier Tape Specifications ("D" Taping Orientation)



DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

Fairchild Semiconductor

SEARCH | [Parametric](#) | [Cross Reference](#) | [Inventory](#)

[space](#)

[Product Folders and](#)

[Applic](#)

find products

[Home](#) >> [Find products](#) >>

[Products groups](#)

[Analog and Mixed](#)

[Signal](#)

[Discrete](#)

[Interface](#)

[Logic](#)

[Microcontrollers](#)

[Non-Volatile](#)

[Memory](#)

[Optoelectronics](#)

[Markets and applications](#)

[New products](#)

[Product selection and parametric search](#)

[Cross-reference search](#)

MOCD207-M

SO8 Dual Channel Phototransistor 8-PIN, SOIC

Contents

[General description](#) | [Applications](#) | [Ordering information](#) | [Product status/pricing/packaging](#) | [Safety agency certificates](#)

General description

The MOCD207M/MOCD208M consist of two silicon phototransistors optically coupled to two which conforms to the standard SOIC-8 footprint.

- Dual Channel Optocoupler
- Convenient Plastic SOIC-8 Surface Mountable Package Style
- Two channels in one compact surface mount package
- Closely Matched Current Transfer Ratios to Minimize Unit-to-Unit Variation
- Minimum $V_{(BR)CEO}$ of 70 Volts Guaranteed
- Standard SOIC-8 Footprint, with a 0.050" Lead Spacing
- Compatible with Dual Wave, Vapor Phase and IR Reflow Soldering
- High Input-Output Isolation of 2500 VAC (rms) Guaranteed
- Meets. U.L. Regulatory Requirements, ,File #E90700, Volume 2

Datasheet

[Download this datasheet](#)

PDF

[e-mail this datasheet](#)

[E-]

This page

[Print version](#)

Related Links

[Request samples](#)

[Dotted line](#)

[How to order products](#)

[Dotted line](#)

[Product Change Notices \(PCNs\)](#)

[Dotted line](#)

[Support](#)

[Dotted line](#)

[Distributor and field sales representatives](#)

[Dotted line](#)

[Quality and reliability](#)

[Dotted line](#)

[Design tools](#)

[technical information](#)

[buy products](#)

[technical support](#)

[my Fairchild](#)

[company](#)

[back to top](#)

Applications

- Feedback control circuits
- Interfacing and coupling systems of different potentials and impedances
- General purpose switching circuits
- Monitor and detection circuits

[back to top](#)

Ordering information

The following options can be ordered with this part:

Option	Order Entry Identifier	Description
R1	R1	Tape and Reel (500-pc reel)
R2	R2	Tape and Reel (2500-pc reel)

[back to top](#)

Product status/pricing/packaging

Product	Product status	Pricing*	Inventory check & ordering	Package type	Leads	Packing method
MOCD207R1VM	Full Production	N/A	Purchase	N/A	N/A	TAPE REEL
MOCD207R2VM	Full Production	N/A	Purchase	N/A	N/A	TAPE REEL
MOCD207-M	Full Production	\$0.405	Purchase	SOIC	8	BOX
MOCD207R2-M	Full Production	\$0.413	Purchase	SOIC	8	TAPE REEL
MOCD207VM	Full Production	N/A	Purchase	N/A	N/A	BOX
MOCD207R1-M	Full Production	\$0.413	Purchase	SOIC	8	TAPE REEL

* Fairchild 1,000 piece Budgetary Pricing

[back to top](#)

Safety agency certificates

Certificate	Agency	
8460,8461 (3051 K)	BSI	British Standards Institution
136616 (161 K)	VDE	VDE Pruf-und Zertifizierungsinstitut
E90700, Vol. 2 (254 K)	UL	Underwriters Laboratories Inc.

[back to top](#)

[Home](#) | [Find products](#) | [Technical information](#) | [Buy products](#) |
[Support](#) | [Company](#) | [Contact us](#) | [Site index](#) | [Privacy policy](#)

[© Copyright 2002 Fairchild Semiconductor](#)

Fairchild Semiconductor

SEARCH | [Parametric](#) | [Cross Reference](#) | [Inventory](#)

[space](#)

[Product Folders and](#)

[Applic](#)

find products

[Home](#) >> [Find products](#) >>

[Products groups](#)

[Analog and Mixed](#)

[Signal](#)

[Discrete](#)

[Interface](#)

[Logic](#)

[Microcontrollers](#)

[Non-Volatile](#)

[Memory](#)

[Optoelectronics](#)

[Markets and applications](#)

[New products](#)

[Product selection and parametric search](#)

[Cross-reference search](#)

MOCD208-M

SO8 Dual Channel Phototransistor 8-PIN, SOIC

Contents

[General description](#) | [Applications](#) | [Ordering information](#) | [Product status/pricing/packaging](#) | [Safety agency certificates](#)

Datasheet

[Download this datasheet](#)

PDF

[e-mail this datasheet](#)

[E-]

This page

[Print version](#)

Related Links

[Request samples](#)

[Dotted line](#)

[How to order products](#)

[Dotted line](#)

[Product Change Notices \(PCNs\)](#)

[Dotted line](#)

[Support](#)

[Dotted line](#)

[Distributor and field sales representatives](#)

[Dotted line](#)

[Quality and reliability](#)

[Dotted line](#)

[Design tools](#)

General description

The MOCD207M/MOCD208M consist of two silicon phototransistors optically coupled to two which conforms to the standard SOIC-8 footprint.

- Dual Channel Optocoupler
- Convenient Plastic SOIC-8 Surface Mountable Package Style
- Two channels in one compact surface mount package
- Closely Matched Current Transfer Ratios to Minimize Unit-to-Unit Variation
- Minimum $V_{(BR)CEO}$ of 70 Volts Guaranteed
- Standard SOIC-8 Footprint, with a 0.050" Lead Spacing
- Compatible with Dual Wave, Vapor Phase and IR Reflow Soldering
- High Input-Output Isolation of 2500 VAC (rms) Guaranteed
- Meets. U.L. Regulatory Requirements, File #E90700, Volume 2

[technical information](#)

[buy products](#)

[technical support](#)

[my Fairchild](#)

[company](#)

[back to top](#)

Applications

- Feedback control circuits
- Interfacing and coupling systems of different potentials and impedances
- General purpose switching circuits
- Monitor and detection circuits

[back to top](#)

Ordering information

The following options can be ordered with this part:

Option	Order Entry Identifier	Description
R1	R1	Tape and Reel (500-pc reel)
R2	R2	Tape and Reel (2500-pc reel)

[back to top](#)

Product status/pricing/packaging

Product	Product status	Pricing*	Inventory check & ordering	Package type	Leads	Packing method
MOCD208R2VM	Full Production	N/A	Purchase	N/A	N/A	TAPE REEL
MOCD208-M	Full Production	\$0.405	Purchase	SOIC	8	BOX
MOCD208R2-M	Full Production	\$0.413	Purchase	SOIC	8	TAPE REEL
MOCD208R1-M	Full Production	\$0.413	Purchase	SOIC	8	TAPE REEL
MOCD208R1VM	Full Production	N/A	Purchase	N/A	N/A	TAPE REEL
MOCD208VM	Full Production	N/A	Purchase	N/A	N/A	BOX

* Fairchild 1,000 piece Budgetary Pricing

[back to top](#)

Safety agency certificates

Certificate	Agency	
8460,8461 (3051 K)	BSI	British Standards Institution
136616 (161 K)	VDE	VDE Pruf-und Zertifizierungsinstitut
E90700, Vol. 2 (254 K)	UL	Underwriters Laboratories Inc.

[back to top](#)

[Home](#) | [Find products](#) | [Technical information](#) | [Buy products](#) |
[Support](#) | [Company](#) | [Contact us](#) | [Site index](#) | [Privacy policy](#)

[© Copyright 2002 Fairchild Semiconductor](#)
