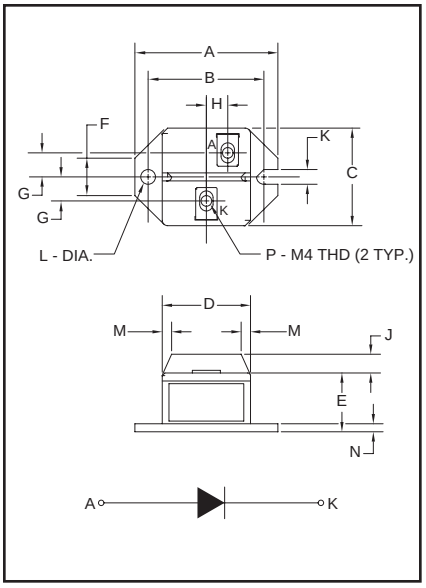
Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

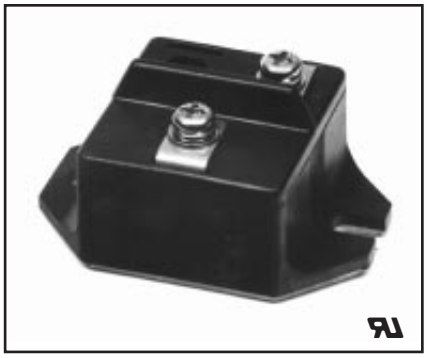
Fast Recovery Single Diode Modules

50 Amperes/600-1200 Volts



Outline Drawing

Dimension	Inches	Millimeters
A	2.087	53
B	1.705±0.008	43.3±0.2
C	1.417	36
D	1.299	33
E	0.866	22
F	0.551	14
G	0.354	9
H	0.315	8
J	0.276	7
K	0.217	5.5
L	0.217 Dia.	Dia. 5.5
M	0.138	3.5
N	0.118	3
P	M4 Metric	M4



CS240650, CS241250
Fast Recovery
Single Diode Modules
50 Amperes/600-1200 Volts

Description:
Powerex Fast Recovery Single Diode Modules are designed for use in applications requiring fast switching. The modules are isolated for easy mounting with other components on common heatsinks. POW-R-BLOK™ has been tested and recognized by Underwriters Laboratories (QQQX2 Power Switching Semiconductors).

Features:

- ☐ Isolated Mounting
- ☐ Planar Chips
- ☐ UL Recognized

Applications:

- ☐ Inverters
- ☐ Choppers
- ☐ Switching Power Supplies
- ☐ Free Wheeling

Ordering Information:
Select the complete eight digit module part number you desire from the table below.
Example: CS241250 is a 1200 Volt, 50 Ampere Fast Recovery Single Diode Module.

Type	Voltage Volts (x100)	Current Rating Amperes (50)
CS24	06	50
	12	

Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

CS240650, CS241250
Fast Recovery Single Diode Modules
50 Amperes/600-1200 Volts

Absolute Maximum Ratings

Characteristics	Symbol	CS240650	CS241250	Units
Peak Reverse Blocking Voltage	V_{RRM}	600	1200	Volts
Transient Peak Reverse Blocking Voltage (Non-Repetitive), t < 5ms	V_{RSM}	720	1350	Volts
DC Reverse Blocking Voltage	$V_{R(DC)}$	480	960	Volts
DC Current, T_C = 105°C	$I_{F(DC)}$	50	50	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (60Hz)	I_{FSM}	1000	1000	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz)	I_{FSM}	910	910	Amperes
I^2t (for Fusing), 8.3 milliseconds	I^2t	4165	4165	A^2sec
Storage Temperature	T_{STG}	-40 to 125	-40 to 125	°C
Operating Temperature	T_j	-40 to 150	-40 to 150	°C
Maximum Mounting Torque M5 Mounting Screw	—	17	17	in.-lb.
Maximum Mounting Torque M4 Terminal Screw	—	12	12	in.-lb.
Module Weight (Typical)	—	90	90	Grams
V Isolation	V_{RMS}	2500	2500	Volts

Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

CS240650, CS241250
Fast Recovery Single Diode Modules
50 Amperes/600-1200 Volts

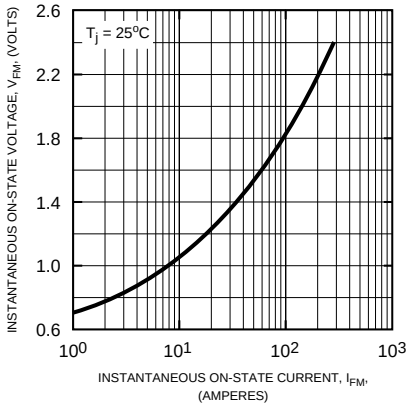
Electrical and Thermal Characteristics, T_j = 25°C unless otherwise specified

Characteristics	Symbol	Test Conditions	CS240650/CS241250	Units
Blocking State Maximums				
Reverse Leakage Current, Peak	I_{RRM}	T_j = 150°C, V_{RRM} = Rated	10	mA
Conducting State Maximums				
Peak On-State Voltage	V_{FM}	I_{FM} = 50A	1.5	Volts
Switching Minimums				
Reverse Recovery Time	t_{rr}	I_{FM} = 50A, T_j = 150°C di/dt =-200A/μs, V_R = 1/2 V_{RRM}	0.8	μs
Reverse Recovery Charge	Q_{rr}	I_{FM} = 50A, T_j = 150°C di/dt =-200A/μs, V_R = 1/2 V_{RRM}	30	μC
Thermal Maximums				
Thermal Resistance, Junction-to-Case	$R_{\theta(J-C)}$	Per Module	0.6	°C/Watt
Thermal Resistance, Case-to-Sink (Lubricated)	$R_{\theta(C-S)}$	Per Module	0.4	°C/Watt

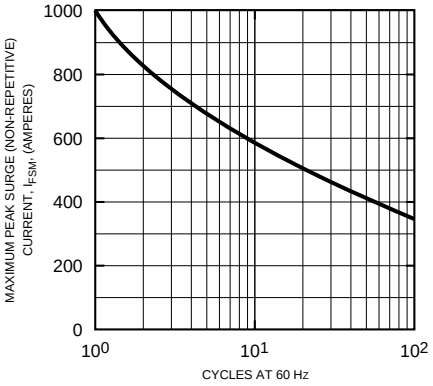
Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

CS240650, CS241250
Fast Recovery Single Diode Modules
50 Amperes/600-1200 Volts

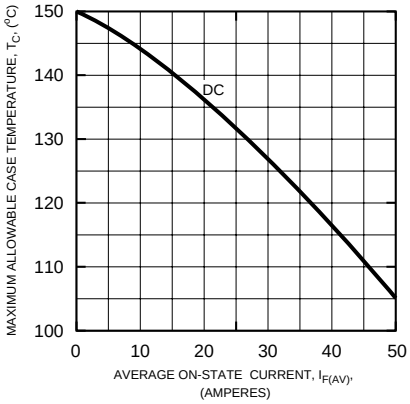
MAXIMUM ON-STATE CHARACTERISTICS



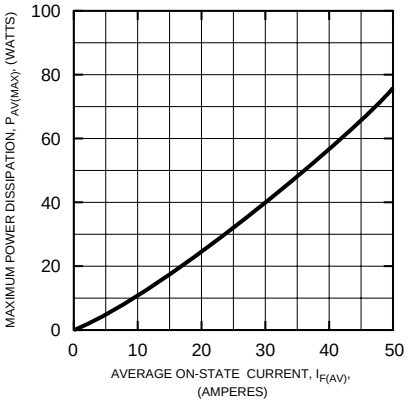
MAXIMUM ALLOWABLE PEAK SURGE (NON-REPETITIVE) CURRENT



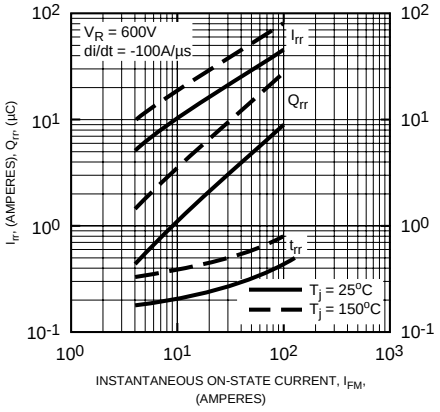
MAXIMUM ALLOWABLE CASE TEMPERATURE



MAXIMUM ON-STATE POWER DISSIPATION



REVERSE RECOVERY CHARACTERISTICS



TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION-TO-CASE)