



THE DATASHEET OF MURS460C



Product Summary (@ T_A = +25°C)

V _{RRM} (V)	I _o (A)	V _F (V)	I _R (μA)	t _{RR} (ns)
600	4	1.28	10	50


Description and Applications

The super-fast recovery time of the MURS460C makes it suitable for boost diode in discontinuous or critical mode power factor corrections. This device is also intended for use as a free-wheeling diode in power supplies and other power-switching applications.

Features and Benefits

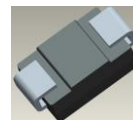
- Glass Passivated Die Construction
- Super-Fast Recovery Time for High Efficiency
- Surge Overload Rating to 110A Peak
- Ideally Suited for Automated Assembly
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

- Case: SMC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 
- Polarity: Cathode Band or Cathode Notch
- Weight: 0.21 grams (Approximate)



Top View



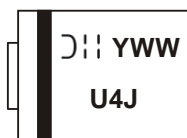
Bottom View


Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
MURS460C-13-F	Commercial	SMC	3,000/Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



U4J = Product Type Marking Code
 = Manufacturers' Code Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 0 for 2020)
 WW = Week Code (01 to 52)

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	600	V
RMS Reverse Voltage	$V_{R(RMS)}$	417	V
Average Rectified Output Current @ $T_C = +120^\circ\text{C}$	I_O	4.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	110	A
Non-Repetitive Peak Forward Surge Current 1.0ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	220	A
Single Pulse Avalanche Energy $L = 15\text{mH}$	E_{AS}	10.8	mJ

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Air (Note 5)	$R_{\theta JA}$	40	$^\circ\text{C/W}$
Typical Thermal Resistance, Junction to Case (Note 5)	$R_{\theta JC}$	7	$^\circ\text{C/W}$
Typical Thermal Resistance, Junction to Lead (Note 5)	$R_{\theta JL}$	15	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	600	—	—	V	$I_R = 10\mu\text{A}$
Forward Voltage	V_F	—	1.15	1.28	V	$I_F = 4\text{A}, T_A = +25^\circ\text{C}$
Leakage Current (Note 6)	I_R	—	0.1 35	10 250	μA	$V_R = 600\text{V}, T_A = +25^\circ\text{C}$ $V_R = 600\text{V}, T_A = +150^\circ\text{C}$
Reverse Recovery Time	t_{RR}	—	—	50	ns	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{RR} = 0.25\text{A}$
Total Capacitance	C_T	—	40	—	pF	$V_R = 4\text{V}, f = 1.0\text{MHz}$

Notes: 5. Unit mounted on glass epoxy substrate 1oz/ft 12mm x 12mm copper pad.
6. Short duration pulse test used to minimize self-heating effect.

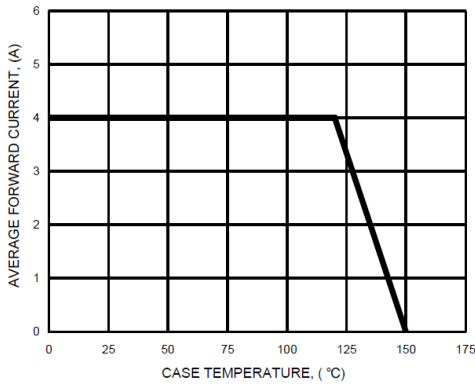


FIG.1- FORWARD CURRENT DERATING CURVE

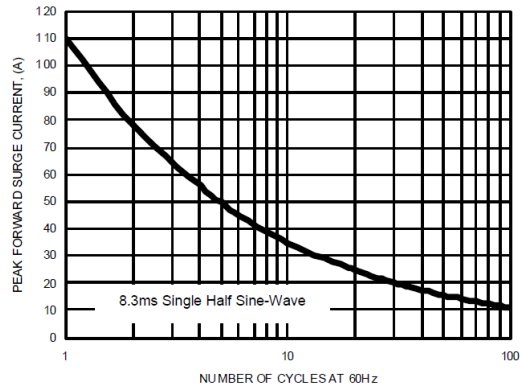


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

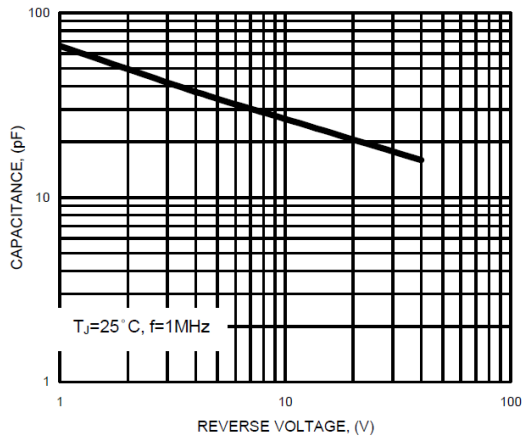


FIG.3- TYPICAL TOTAL CAPACITANCE

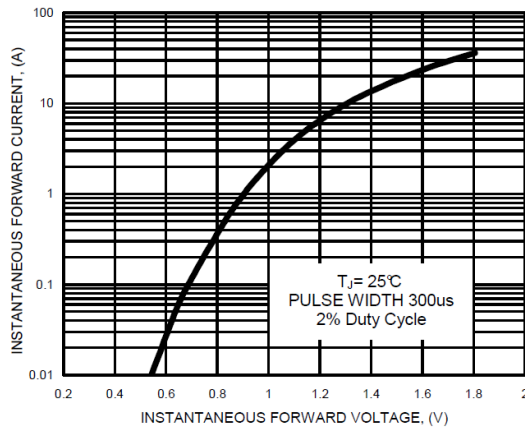


FIG.4- TYPICAL FORWARD CHARACTERISTICS

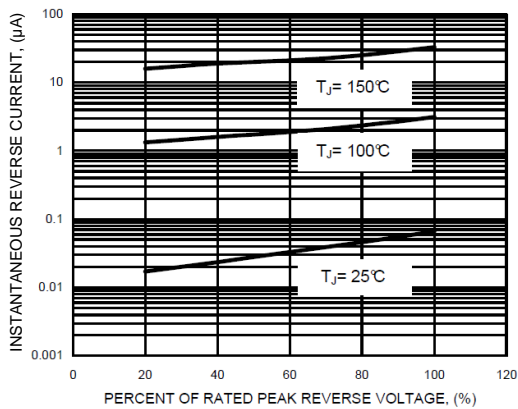


FIG.5- TYPICAL REVERSE CHARACTERISTICS

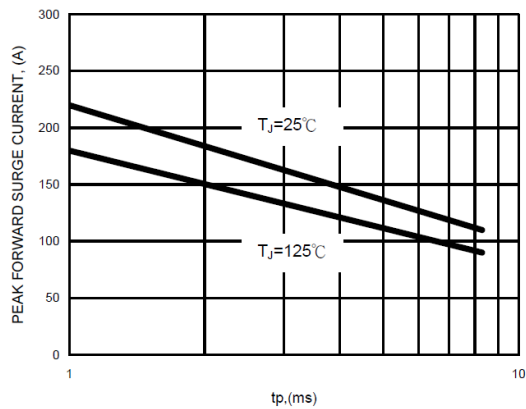
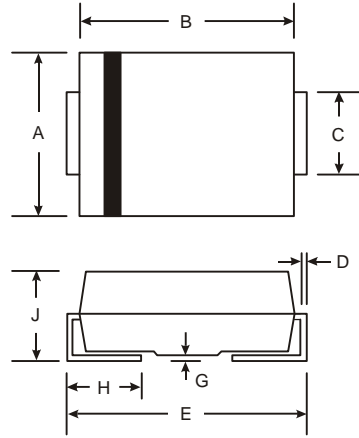


FIG.6- NON-REPETITIVE SURGE CURRENT

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SMC

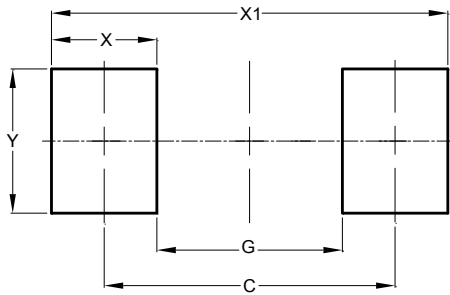


SMC		
Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.50
All Dimensions in mm		

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SMC



Dimensions	Value (in mm)
C	6.90
G	4.40
X	2.50
X1	9.40
Y	3.30

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