SMF501C - SMF507C

SURFACE MOUNT FAST RECOVERY RECTIFIER DIODES

VOLTAGE RANGE: 50V-1000 V
CURRENT: 5.0 A

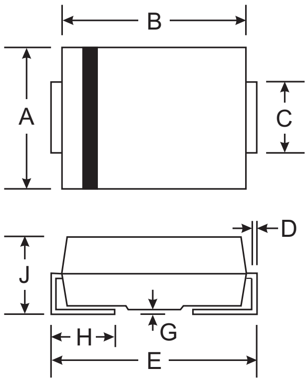
Features

- Glass Passivated Die Construction
- Fast Recovery Time for High Efficiency
- Low Forward Voltage Drop and High Current Capability
- Ideally Suited for Automatic Assembly
- Plastic Material: UL Flammability Classification Rating 94V-0

Mechanical Data

- Case: SMC(DO-214AB),Molded Plastic
- Terminals: Solder Plated Terminal - Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- Weight: 0.21 grams (approx.)

RoHS COMPLIANT



SMC/DO-214AB		
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	2.62
All Dimensions in mm		

Maximum Ratings and Electrical Characteristics

@ T_A = 25°C unless otherwise specified

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

Characteristic	Symbol	SMF501C	SMF502C	SMF503C	SMF504C	SMF505C	SMF506C	SMF507C	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	50	100	200	400	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Average Rectified Output Current @ T_T = 75°C	I_O	5.0							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	150							A
Forward Voltage @ I_F = 5.0A	V_{FM}	1.3							V
Peak Reverse Current @ T_A = 25°C at Rated DC Blocking Voltage @ TA = 125°C	I_{RM}	5.0 100							µA
Maximum Recovery Time (Note 3)	t_{rr}	150				250	500		ns
Typical Junction Capacitance (Note 2)	C_j	78							pF
Typical Thermal Resistance Junction to Terminal (Note 1)	$R_{\theta JT}$	50							K/W
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +150							°C

Notes:
1. Thermal resistance: junction to terminal, unit mounted on PC board with 5.0 mm^2 (0.013 mm thick) copper pad as heat sink.
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
3. Reverse recovery test conditions: I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A. See figure 5.

RATINGS AND CHARACTERISTIC CURVES SMF501C THRU SMF507C

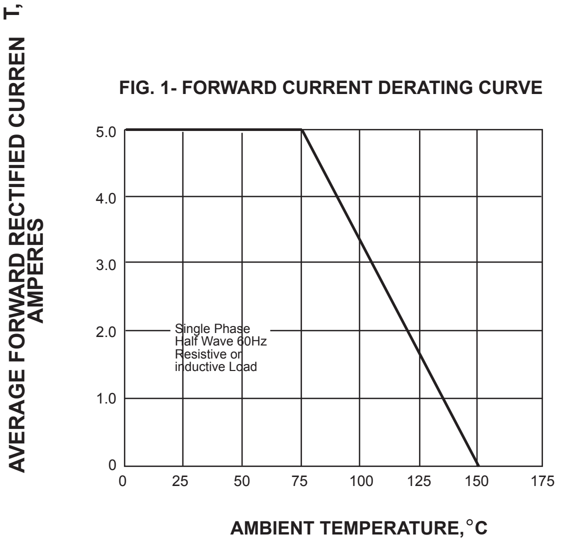


FIG. 1- FORWARD CURRENT DERATING CURVE

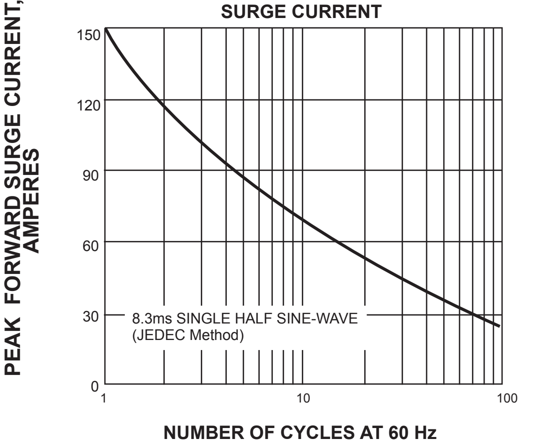


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

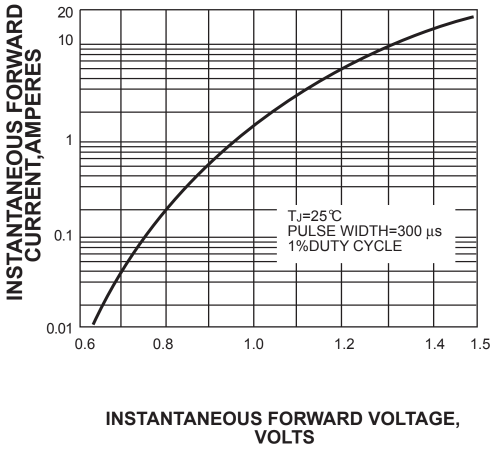


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

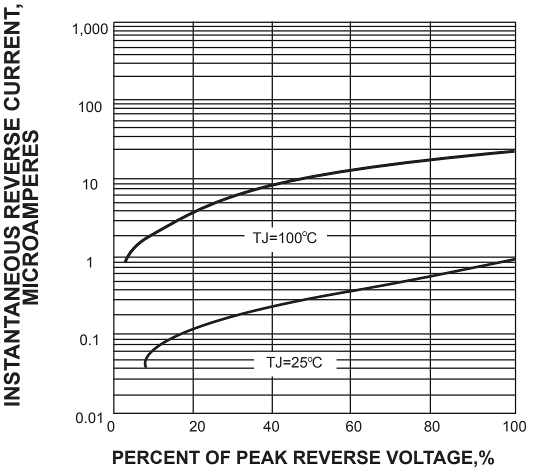


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

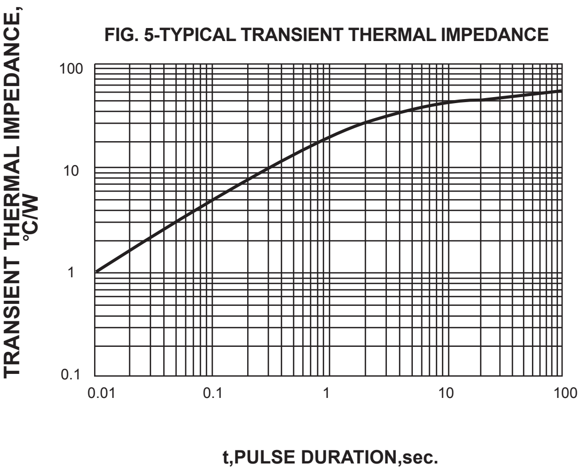


FIG. 5-TYPICAL TRANSIENT THERMAL IMPEDANCE

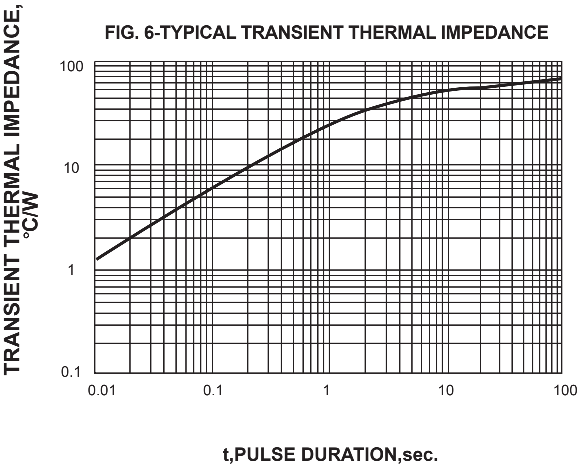


FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE