

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

- Planar MOS Schottky Technology
- High Thermal Reliability
- High Forward Surge Capability
- Ultra Low Power Loss and High Efficiency
- Excellent High Temperature Stability
- Plastic Material-UL Flammability 94V-0

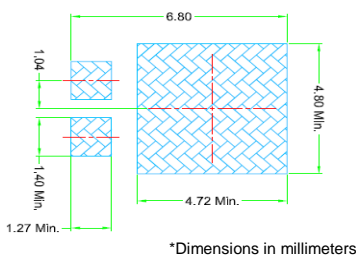
PACKAGE INFORMATION

Package	MPQ	Leader Size
TO-277A	5K	13 inch

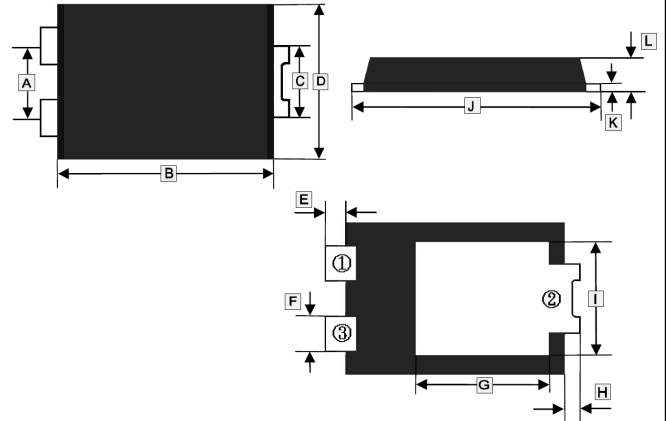
ORDER INFORMATION

Part Number	Type
SMPA2045L-C	Lead (Pb)-free and Halogen-free

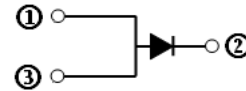
Mounting Pad Layout



TO-277A



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.00	2.20	G	4.05 TYP.	
B	5.90	6.30	H	1.125 TYP.	
C	1.85	2.25	I	3.55	3.95
D	4.10	4.50	J	6.30	6.70
E	0.206 TYP.		K	0.15	0.35
F	1.00	1.40	L	1.00	1.40



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

($T_A=25^\circ\text{C}$, unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, de-rate current by 20%.)

Parameter	Symbol	Ratings	Unit
Maximum Peak Repetitive Reverse Voltage	V_{RRM}	45	V
Maximum Working Peak Reverse Voltage	V_{RWM}	45	V
Maximum DC Blocking Voltage	V_{DC}	45	V
Maximum Average Rectified Output Current	I_F	20	A
Non-Repetitive Peak Forward Surge Current @8.3ms single half sine-wave, superimposed on rated load (JEDEC Method) ²	I_{FSM}	275	A
I^2t Rating for Fusing @ $t < 8.3\text{ms}$	I^2t	313.844	A^2S
Typical Thermal Resistance from Junction-Case ¹	$R_{\theta JC}$	7	$^\circ\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	150, -55~150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

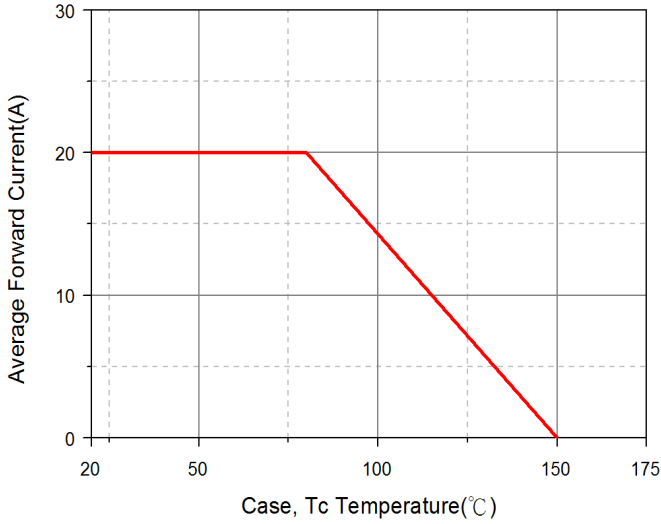
Parameter	Symbol	Typ.	Max.	Unit	Test Conditions
Maximum Instantaneous Forward Voltage	V_F	0.41	-	V	$I_F=10\text{A}, T_A=25^\circ\text{C}$
		0.5	0.55		$I_F=20\text{A}, T_A=25^\circ\text{C}$
		0.47	-		$I_F=20\text{A}, T_A=125^\circ\text{C}$
Maximum DC Reverse Current at Rated DC Blocking Voltage ²	I_R	-	0.3	mA	$T_A=25^\circ\text{C}$
		-	15		$T_A=100^\circ\text{C}$
Typical Junction Capacitance ³	C_J	820	-	pF	

Notes:

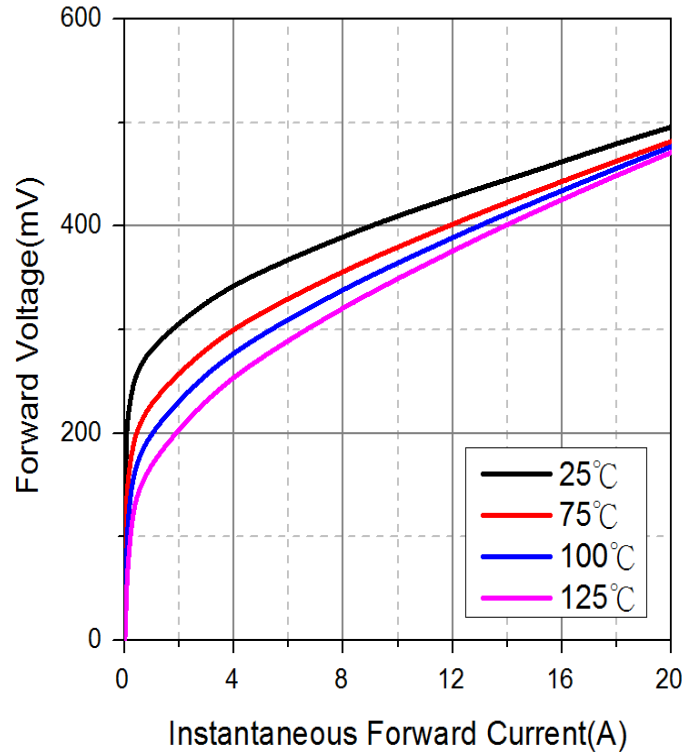
1. FR-4 Board Heat sink size: $10 \times 10 \times 0.2\text{mm}$.
2. Pulse Test: Pulse Width=300 μs , Duty Cycle $\leq 2\%$.
3. Measured at 1MHz and applied reverse voltage of 5V D.C.

CHARACTERISTIC CURVES

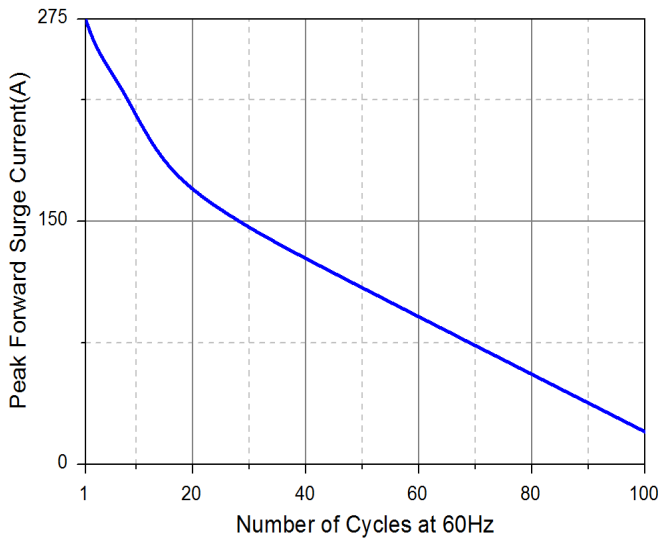
Typical Forward Current Derating Curve



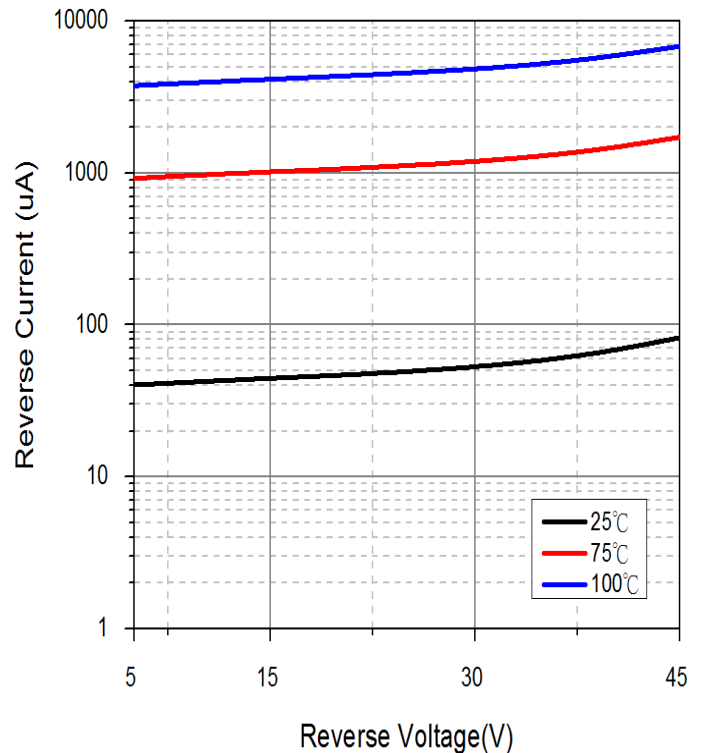
Typical Forward Characteristic



Maximum Non-Repetitive Forward Surge Current



Typical Reverse Characteristic



Typical Junction Capacitance

