

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

FEATURES

- Schottky Barrier Chip
- High Thermal Reliability
- Patented Super Barrier Rectifier Technology
- High Forward Surge Capability
- Ultra Low Power Loss and High Efficiency
- Excellent High Temperature Stability
- Plastic Material-UL Flammability 94V-0
- Qualified to AEC-Q101 Standards for High Reliability

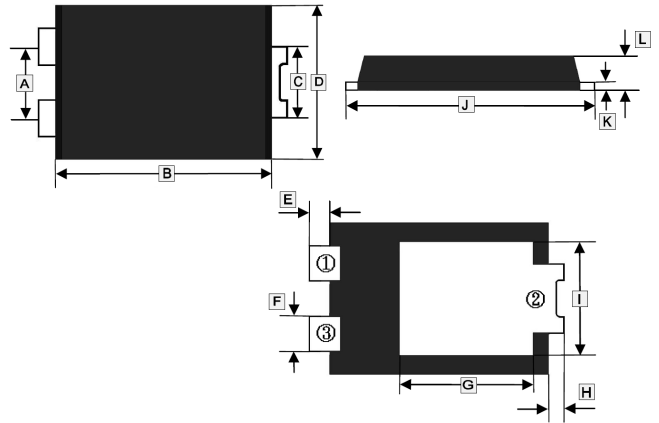
PACKAGE INFORMATION

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

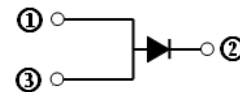
ORDER INFORMATION

Part Number	Type
SMPD1045LCR-C	Lead (Pb)-free and Halogen-free

TO-277D



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.65	1.95	G	3.25	3.85
B	5.3	5.5	H	0.45	0.65
C	1.7	1.9	I	2.9	3.2
D	3.8	4.2	J	6.4	6.6
E	0.45	0.65	K	0.3	0.45
F	0.8	1.0	L	1.0	1.2



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	Rating	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_o	10	A
Non-Repetitive Peak Forward Surge Current, 8.3ms single half sine-wave, superimposed on rated load (JEDEC method) ²	I_{FSM}	250	A
I^2t Rating for Fusing @ $t < 8.3\text{ms}$	I^2t	259.375	A^2S
Typical Thermal Resistance from Junction-Case ¹	$R_{\theta JC}$	7	$^\circ\text{C}/\text{W}$
Operating Junction & Storage Temperature Range	T_J, T_{STG}	150, -55~150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

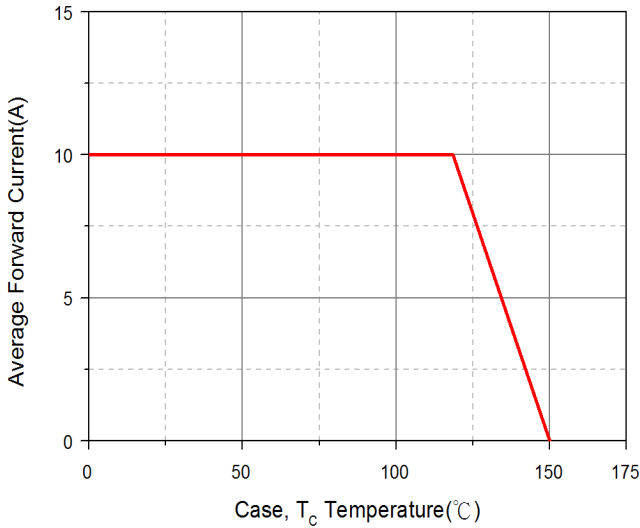
Parameter	Symbol	Typ.	Max.	Unit	Test Condition
Maximum Instantaneous Forward Voltage	V_F	-	0.45	V	$I_F=10\text{A}, T_A=25^\circ\text{C}$
		0.38	-		$I_F=10\text{A}, T_A=125^\circ\text{C}$
Maximum DC Reverse Current at Rated DC Blocking Voltage ²	I_R	-	0.3	mA	$T_A=25^\circ\text{C}$
		-	15		$T_A=100^\circ\text{C}$

Notes:

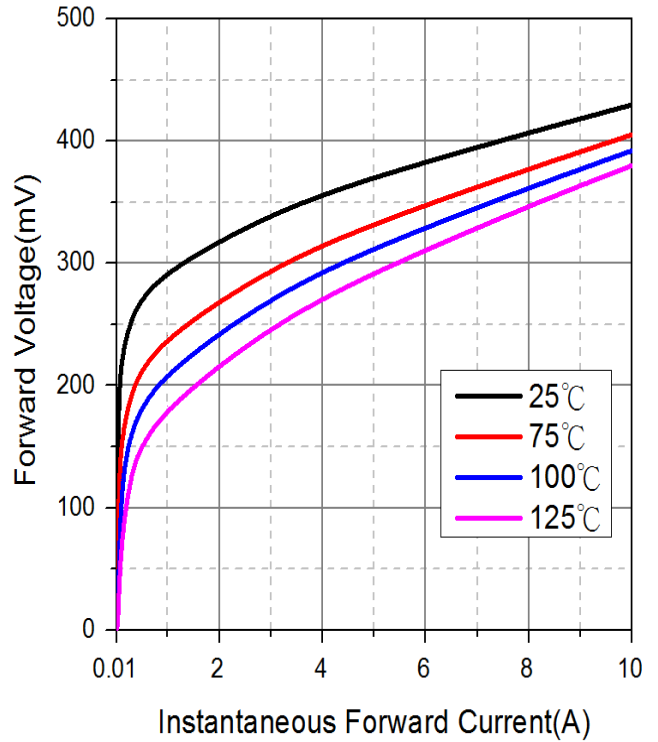
1. FR-4 Board Heat sink size: $10 \times 10 \times 0.2\text{mm}$.
2. Pulse Test: Pulse Width=300 μs , Duty Cycle $\leq 2\%$.

CHARACTERISTIC CURVES

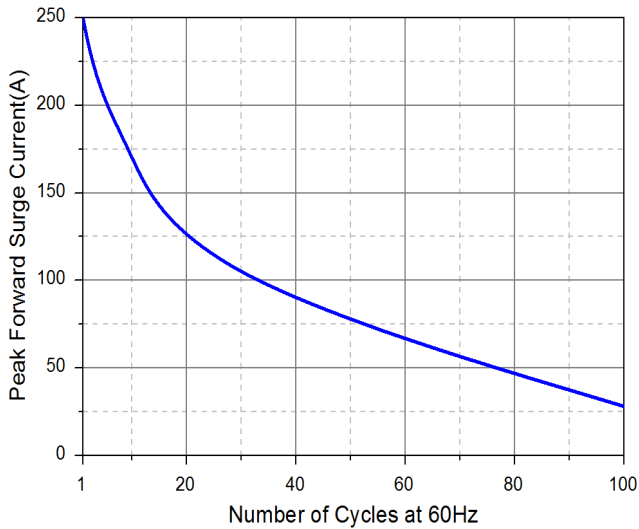
Typical Forward Current Derating Curve



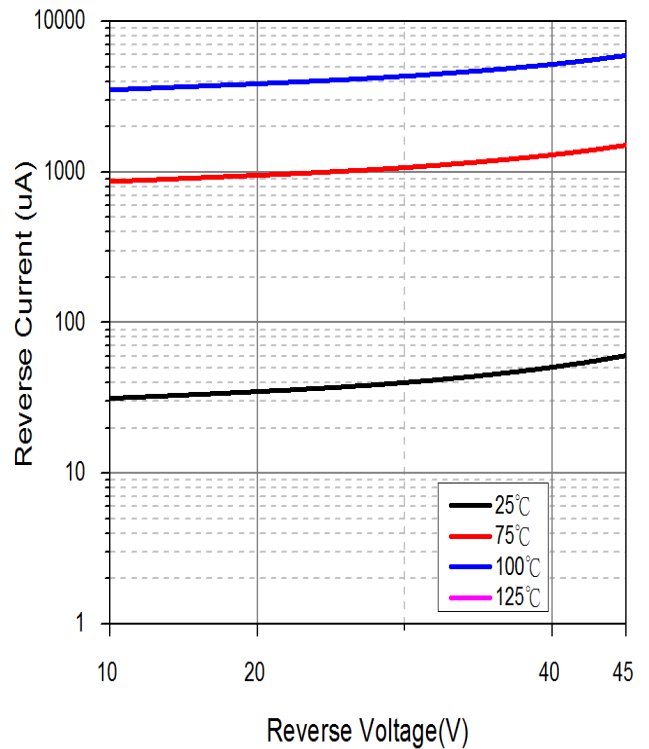
Typical Forward Characteristic



Maximum Non-Repetitive Forward Surge Current



Typical Reverse Characteristic



Mounting Pad Layout

