

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

FEATURES

- Trench Barrier Rectifier Technology
- High Thermal Reliability
- Low Forward Voltage Drop
- Low Reverse Current
- High Forward Surge Capability
- Ultra Low Power Loss and High Efficiency
- Excellent High Temperature Stability
- Plastic Material-UL Flammability 94V-0

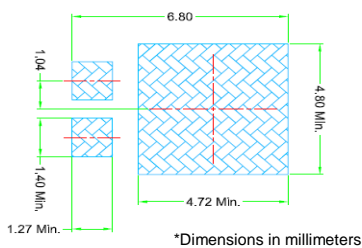
PACKAGE INFORMATION

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

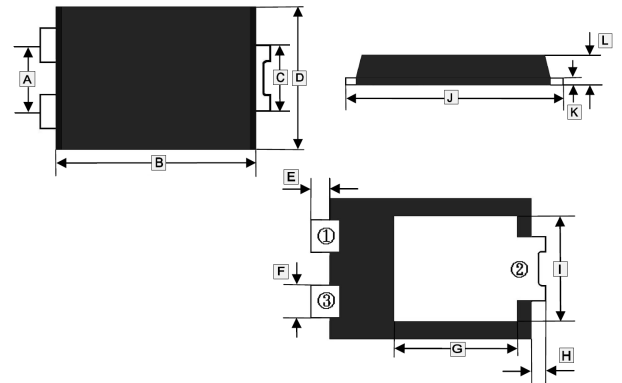
PACKAGE INFORMATION

Part Number	Type
SMPA15120L-C	Lead (Pb)-free and Halogen-free

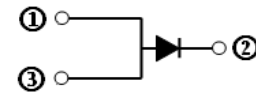
Mounting Pad Layout



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	Rating	Unit
Maximum Peak Repetitive Reverse Voltage	V_{RRM}	120	V
Maximum Working Peak Reverse Voltage	V_{RWM}	120	V
Maximum DC Blocking Voltage	V_{DC}	120	V
Maximum Average Rectified Current	I_F	15	A
Non-Repetitive Peak Forward Surge Current @8.3ms single half sine-wave, superimposed on rated load (JEDEC method)	I_{FSM}	200	A
Voltage Rate of Change (Rated V_R)	dv/dt	10000	V/ μs
Typical Thermal Resistance from Junction-Ambient	$R_{\theta JA}$	110	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance from Junction-Lead	$R_{\theta JL}$	3.5	
Operating Junction and Storage Temperature Range	T_J, T_{STG}	150, -55~150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

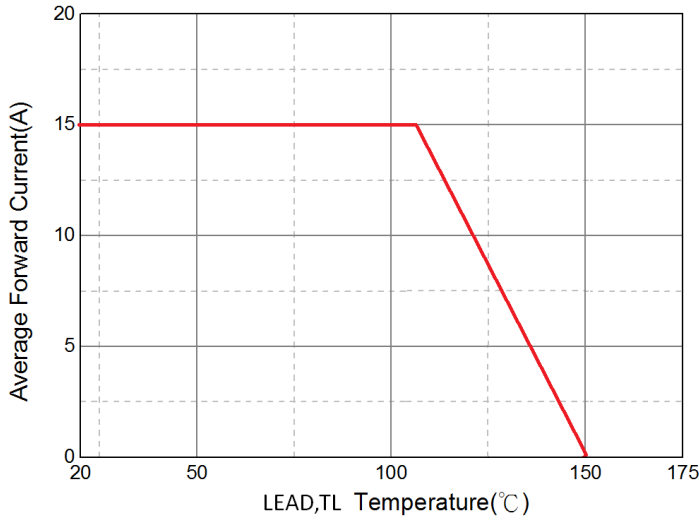
Parameter	Symbol	Typ.	Max.	Unit	Test Condition
Maximum Instantaneous Forward Voltage	V_F	0.49	0.52	V	$I_F=3\text{A}, T_J=25^\circ\text{C}$
		0.55	0.58		$I_F=5\text{A}, T_J=25^\circ\text{C}$
		0.8	0.84		$I_F=15\text{A}, T_J=25^\circ\text{C}$
		0.65	-		$I_F=15\text{A}, T_J=125^\circ\text{C}$
Maximum DC Reverse Current at Rated DC Blocking Voltage ¹	I_R	-	0.1	mA	$T_J=25^\circ\text{C}$
		-	20		$T_J=100^\circ\text{C}$
Typical Junction Capacitance ²	C_J	470	-	pF	

Notes:

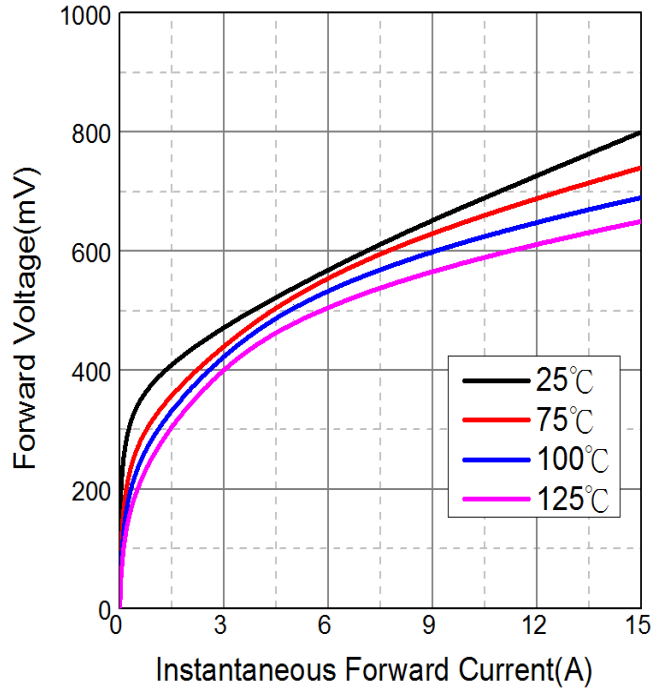
1. Pulse Test: Pulse width=300 μs , duty cycle $\leq 2\%$.
2. Measured at 1MHz and applied reverse voltage of 5V D.C.

CHARACTERISTIC CURVES

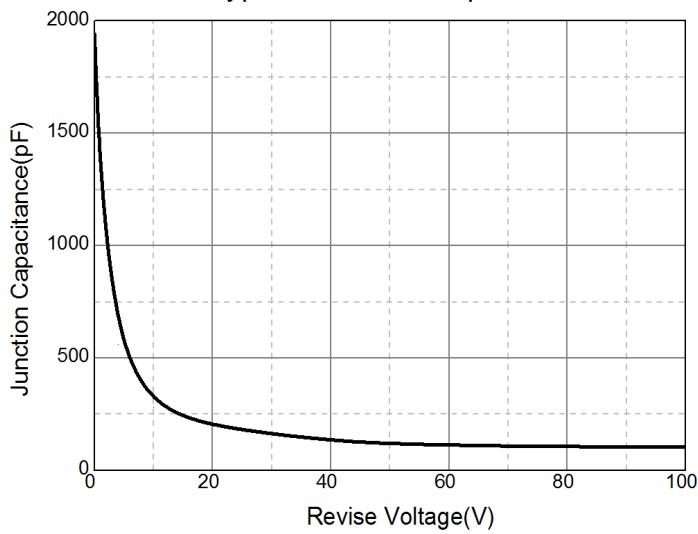
Typical Forward Current Derating Curve



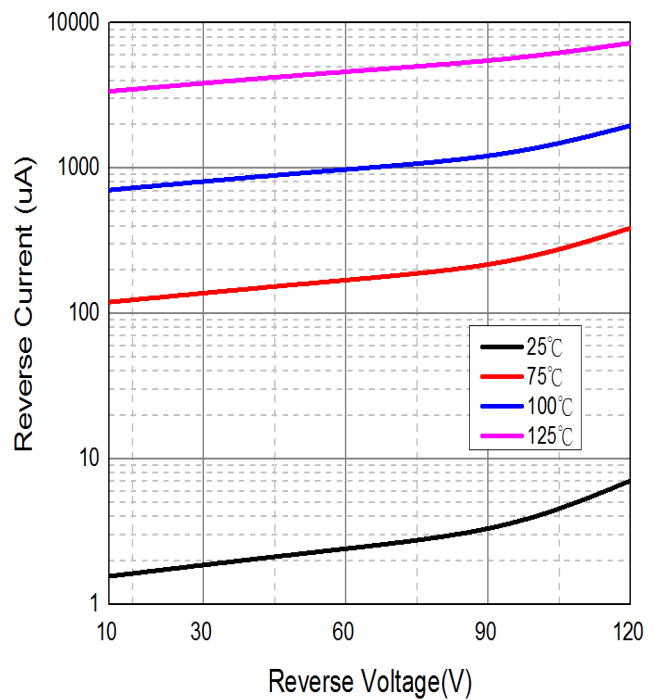
Typical Forward Characteristic



Typical Junction Capacitance



Typical Reverse Characteristic



Maximum Non-Repetitive Forward Surge Current

