

## 1A, 50 - 1000V Surface Mount Rectifier

### FEATURES

- Plastic package has carries underwriters
- Ideal for automated placement
- Surge overload rating to 30A peak
- Reliable low cost construction utilizing molded
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Inverters and Converters
- Free Wheeling diodes

### MECHANICAL DATA

- Case: MELF
- Molding compound meets UL 94V-0 flammability rating
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 120.00mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	1	A
$V_{RRM}$	50 - 1000	V
$I_{FSM}$	30	A
$T_{JMAX}$	150	°C
Package	MELF	



MELF

ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	LL4001 G	LL4002 G	LL4003 G	LL4004 G	LL4005 G	LL4006 G	LL4007 G	UNIT
Repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Forward current	$I_F$	1							A
Surge peak forward current 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	30							A
Junction temperature	$T_J$	-65 to +150							°C
Storage temperature	$T_{STG}$	-65 to +150							°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-case thermal resistance	$R_{\theta JC}$	50	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage <sup>(1)</sup>	$I_F = 1.0\text{A}$	$V_F$	-	1.1	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	5	$\mu\text{A}$
	$T_J = 125^\circ\text{C}$		-	100	$\mu\text{A}$
Junction capacitance	1 MHz, $V_R = 4.0\text{V}$	$C_J$	15	-	pF

**Notes:**

1. Pulse test with  $PW = 0.3\text{ ms}$
2. Pulse test with  $PW = 30\text{ ms}$

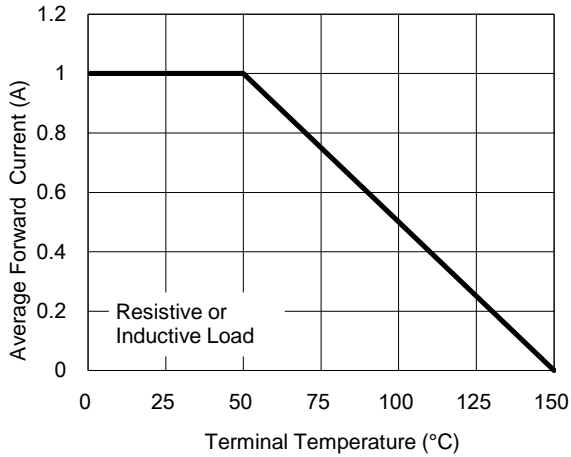
<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b> <sup>(1)</sup>	<b>PACKAGE</b>	<b>PACKING</b>
LL400xG L0G	MELF	5,000/13" reel

**Notes:**

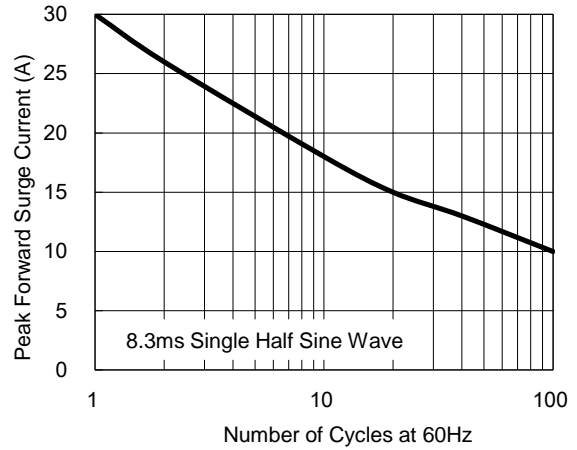
- (1) "x" defines voltage from 50V(LL4001G) – 1000V(LL4007G)

**CHARACTERISTICS CURVES** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

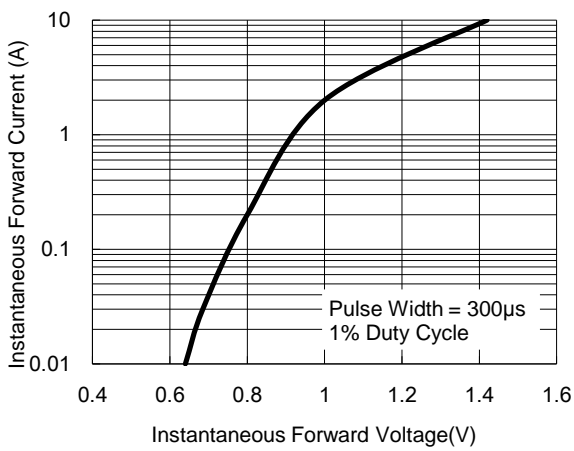
**Fig.1 Forward Current Derating Curve**



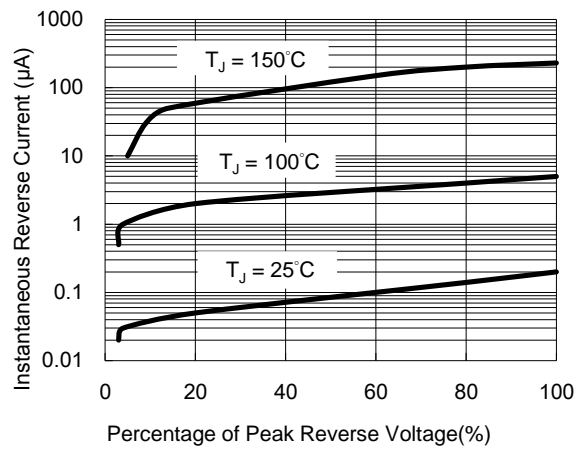
**Fig.2 Maximum Non-Repetitive Peak Forward Surge Current**



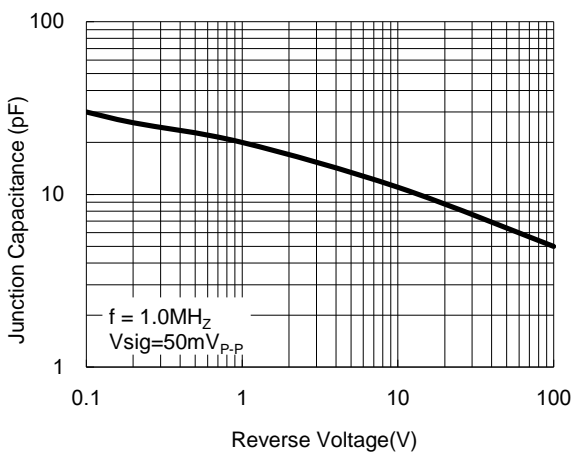
**Fig.3 Typical Forward Characteristics**



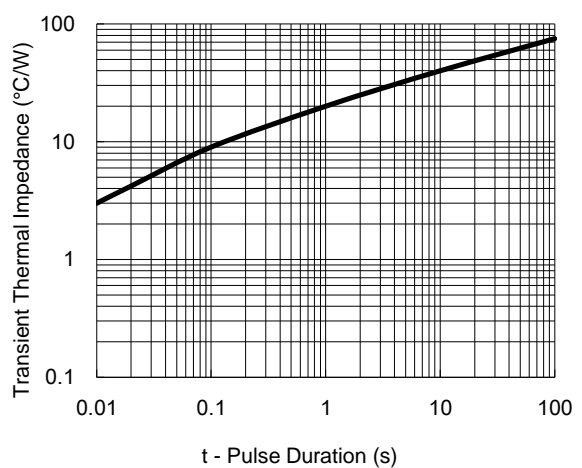
**Fig.4 Typical Reverse Characteristics**



**Fig.5 Typical Junction Capacitance**

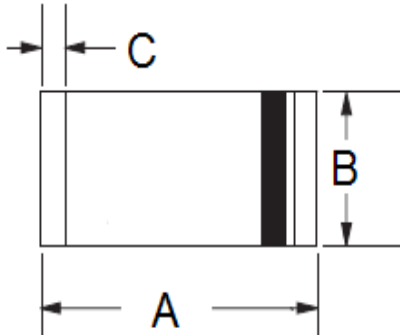


**Fig.6 Typical Transient Thermal Impedance**



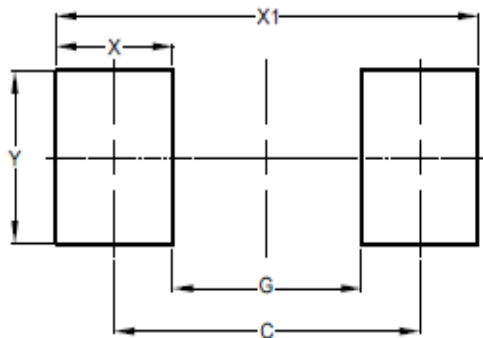
**PACKAGE OUTLINE DIMENSIONS**

MELF



DIM	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	4.80	5.50	0.189	0.217
B	2.25	2.67	0.089	0.105
C	0.30	0.60	0.012	0.024

**SUGGESTED PAD LAYOUT**



DIM	Unit (mm)	Unit (inch)
	TYP	TYP
C	4.80	0.189
G	3.30	0.130
X	1.50	0.059
X1	6.30	0.248
Y	2.70	0.106

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