

150mA, 75V Surface Mount Switching Diode

FEATURES

- Low power loss, high efficiency
- High surge current capability
- Hermetically sealed glass
- RoHS Compliant

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

MECHANICAL DATA

- Case: MMELF
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Polarity: Indicated by cathode band
- Weight: 30.60mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	150	mA
V_{RRM}	75	V
I_{FSM}	4	A
V_F at $I_F = 100\text{mA}$	1	V
$T_{J\text{ MAX}}$	175	°C
Package	MMELF	
Configuration	Single die	



MMELF



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER		SYMBOL	VALUE	UNIT
Power dissipation		P_D	500	mW
Repetitive peak reverse voltage		V_{RRM}	75	V
Forward current		I_F	150	mA
Non-repetitive peak forward surge current	$t = 1\text{s}$	I_{FSM}	0.5	A
	$t = 1\text{ms}$		1.0	A
	$t = 1\mu\text{s}$		4.0	A
Repetitive peak forward current		I_{FRM}	450	mA
Junction temperature range		T_J	-65 to +175	°C
Storage temperature range		T_{STG}	-65 to +175	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	300	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	MIN	MAX	UNIT
Reverse Breakdown Voltage		$I_R = 100\mu\text{A}$	V_{BR}	100	-	V
		$I_R = 5\mu\text{A}$		75	-	V
Forward voltage ⁽¹⁾	LL4448 LL914B	$I_F = 5\text{mA}, T_J = 25^\circ\text{C}$	V_F	0.62	0.72	V
	LL4148	$I_F = 50\text{mA}, T_J = 25^\circ\text{C}$		-	1	V
	LL4448 LL914B	$I_F = 100\text{mA}, T_J = 25^\circ\text{C}$		-	1	V
Reverse current @ rated V_R ⁽²⁾		$V_R = 20\text{V}, T_J = 25^\circ\text{C}$	I_R	-	25	nA
		$V_R = 75\text{V}, T_J = 25^\circ\text{C}$		-	5	μA
Junction capacitance		1 MHz, $V_R = 0\text{V}$	C_J	-	4	pF
Reverse Recovery Time		$I_F = I_R = 10\text{mA}$, $R_L = 100\Omega, I_{RR} = 1\text{mA}$	t_{rr}	-	4	ns

Notes:

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

ORDERING INFORMATION

ORDERING CODE ⁽¹⁾	PACKAGE	PACKING
LL4148 L0	MMELF	10,000 / 13" Tape & Reel
LL4448 L0	MMELF	10,000 / 13" Tape & Reel
LL914B L0	MMELF	10,000 / 13" Tape & Reel
LL4148 LOG	MMELF	10,000 / 13" Tape & Reel
LL4448 LOG	MMELF	10,000 / 13" Tape & Reel
LL914B LOG	MMELF	10,000 / 13" Tape & Reel

Notes:

1. Above ordering codes L0/LOG refer to physically identical parts without any differences

CHARACTERISTICS CURVES

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

Fig.1 Typical Forward Characteristics

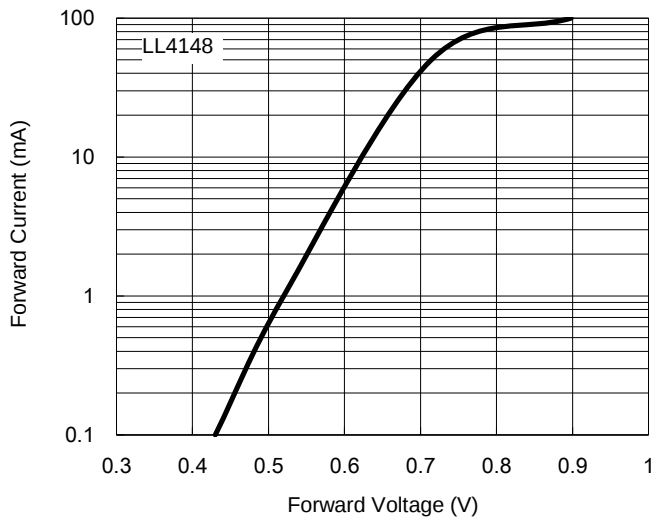


Fig.2 Reverse Current VS. Reverse Voltage

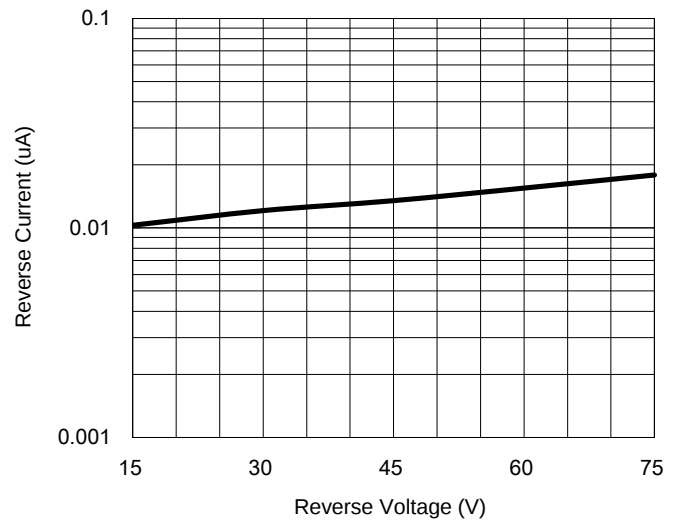


Fig.3 Admissible Power Dissipation Curve

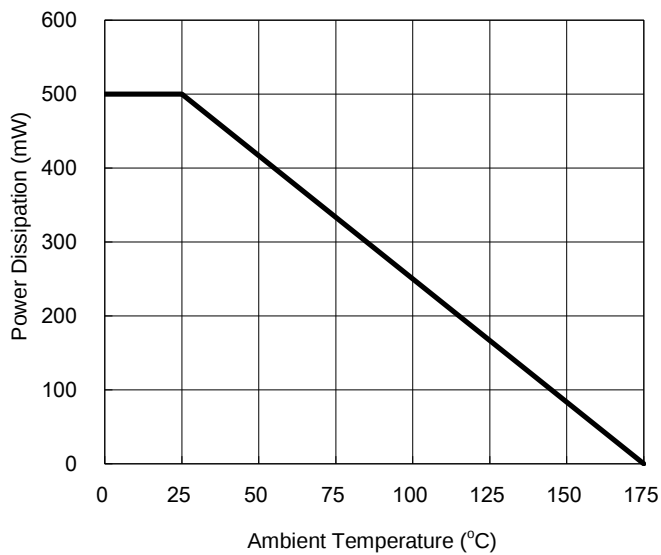
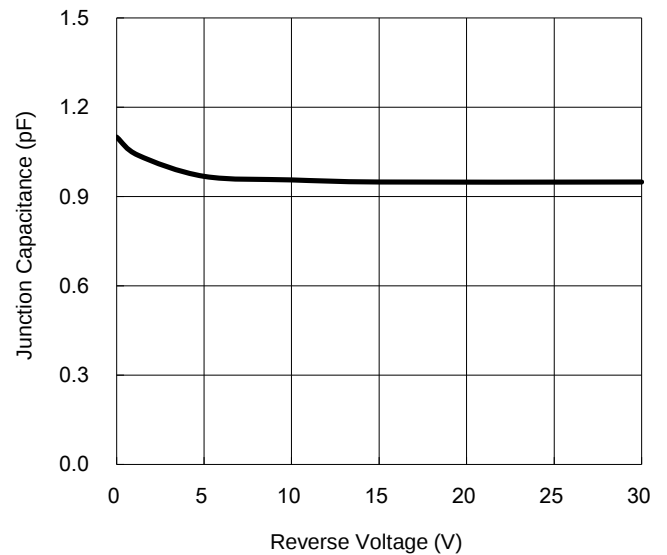


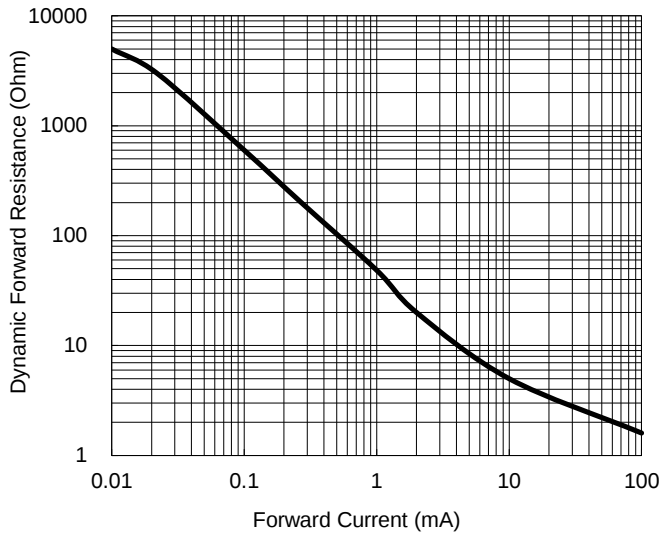
Fig.4 Typical Junction Capacitance



CHARACTERISTICS CURVES

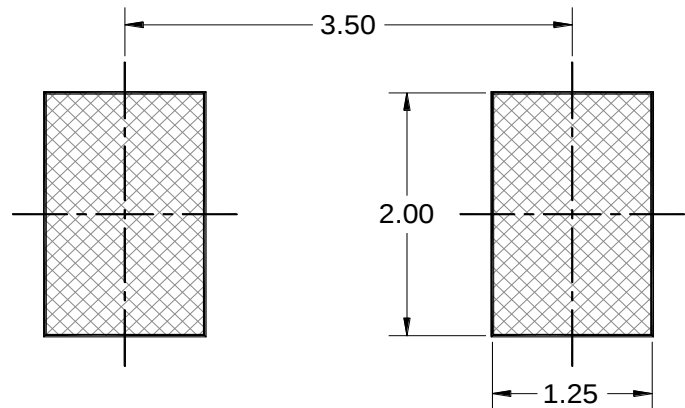
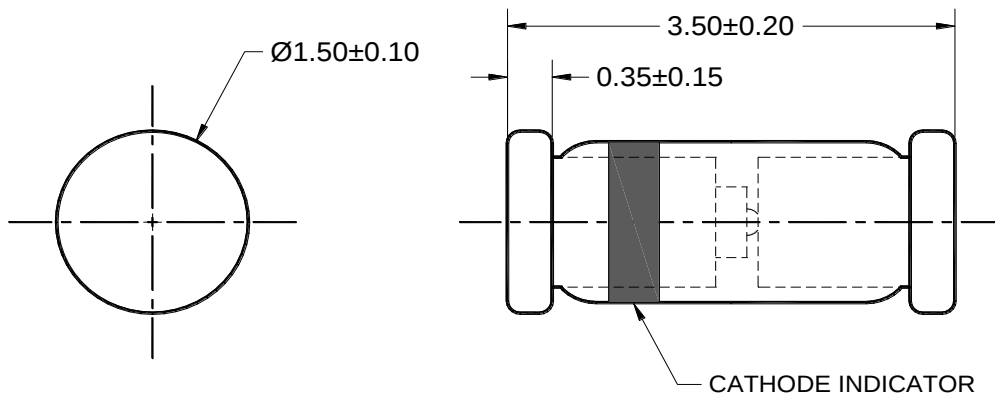
($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.5 Forward Resistance VS. Forward Current



PACKAGE OUTLINE DIMENSIONS

MMELF



NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-213, VARIATION AA, ISSUE D.
4. DWG NO. REF: HQ2SD07-MMELFG-044 REV A.

SUGGESTED PAD LAYOUT

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