LITE-ON SEMICONDUCTOR

ES1JN

SURFACE MOUNT
SUPER FAST RECOVERY RECTIFIER

REVERSE VOLTAGE – 600 Volts
FORWARD CURRENT – 1 Amperes

FEATURES

- Ideal for automated placement
- High surge current capability
- Low power loss, high efficiency
- Qualification is according to AEC-Q101 Rev_C

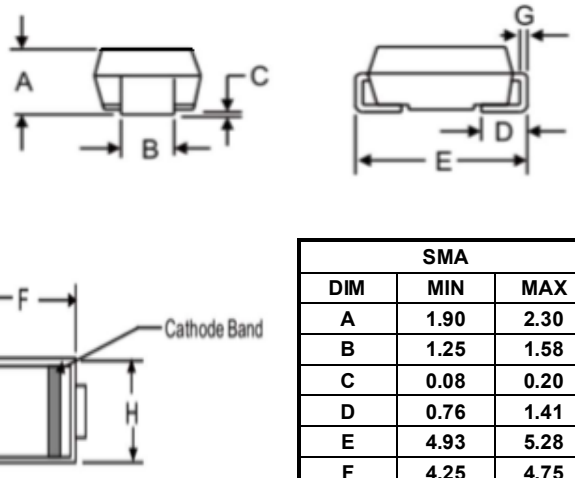
APPLICATION

- High frequency rectification
- Freewheeling application in switching mode converters
- Inverters for consumer

MECHANICAL DATA

- Case: JEDEC DO-214AC
- Case Material: “Green” molding compound, UL flammability classification 94V-0,“Halogen-free”.
- Moisture Sensitivity Level 1 per J-STD-020
- Polarity: Indicated by cathode band
- Lead free finish, RoHS compliant
- Weight: 0.07 grams (Approximate)
- Marking code: E1JN

SMA



SMA		
DIM	MIN	MAX
A	1.90	2.30
B	1.25	1.58
C	0.08	0.20
D	0.76	1.41
E	4.93	5.28
F	4.25	4.75
G	0.152	0.305
H	2.40	2.83
All dimension in millimeter		

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE RATINGS

PARAMETER		SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	600	V
Maximum DC blocking voltage		V_{DC}	600	V
Maximum Average rectified output current	@T_L=105°C	$I_{(AV)}$	1	A
Peak forward surge current 8.3ms single half sine-wave Superimposed on rated load.		I_{FSM}	30	A
Operating junction and Storage Temperature range		T_J, T_{STG}	-55 ~ +150	°C

STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS		SYMBOL	TYP	MAX	UNIT
Forward voltage (Note 1)	I_F=1A	T_J=25°C T_J=125°C	V_F	-- 1.10	1.70 --	V
Leakage current	V_R=600V	T_J=25°C T_J=125°C	I_R	-- 7	5 200	uA
Typical junction capacitance (Note 2)			C_J	9		pF

DYNAMIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	MAX	UNIT
Reverse recovery time	I_F=0.5A,I_{rr}=0.25A,I_R=1.0A	T_{RR}	35	nS

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Note 3,4)	$RthJ_L$	35	°C/W

REV.-4, Sep-2019, KESA20

Note :

(1) 300us pulse width, 2% duty cycle.
(2) Measured at 1.0MHz and applied voltage of 4.0V DC.
(3) Thermal resistance test performed in accordance with JESD-51.
(4) The unit mounted on P.C.B (5mm x 7mm)

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RATING AND CHARACTERISTIC CURVES
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LITEON

FIG.1 FORWARD CURRENT DERATING CURVE

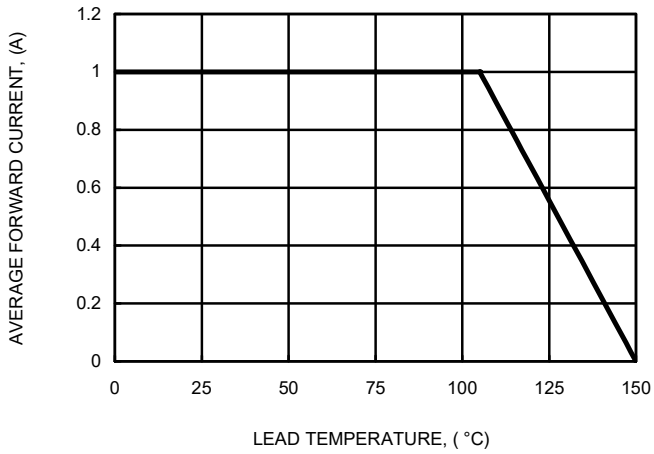


FIG.2 MAXIMUM NON-REPETITIVE SURGE CURRENT

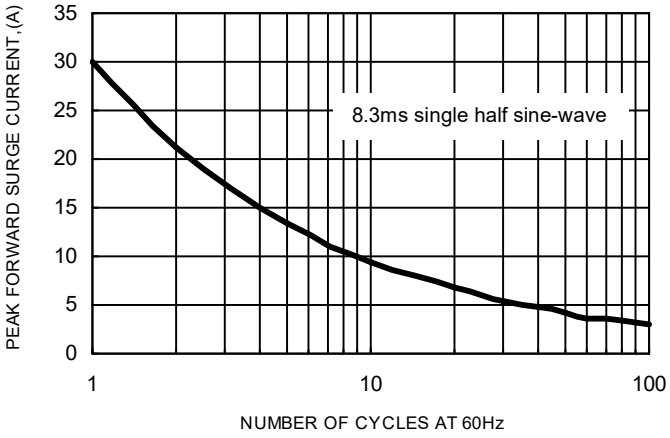


FIG.3 TYPICAL FORWARD CHARACTERISTICS

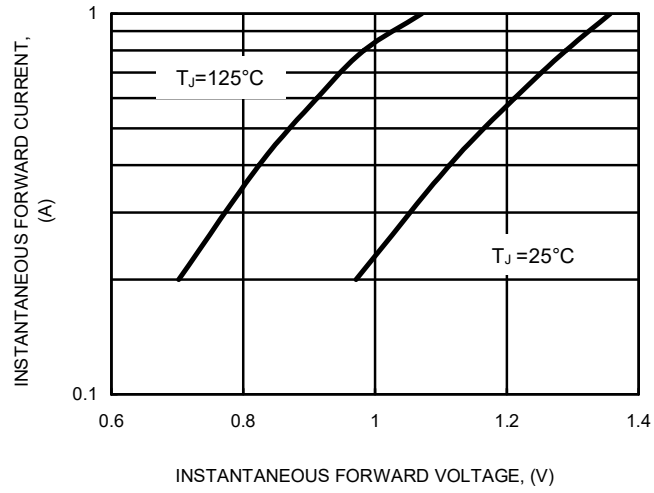


FIG.4 TYPICAL JUNCTION CAPACITANCE

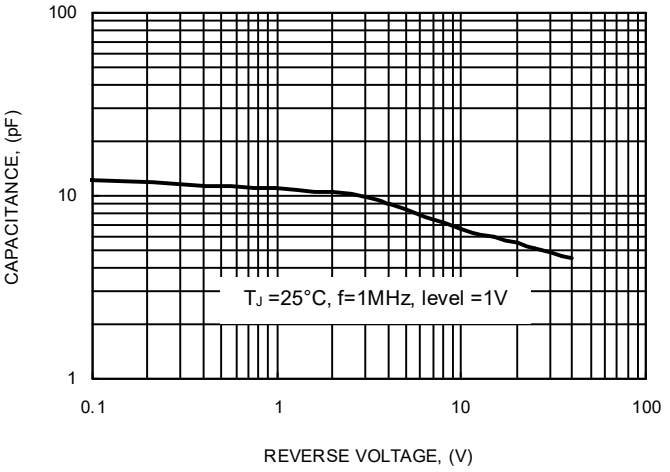
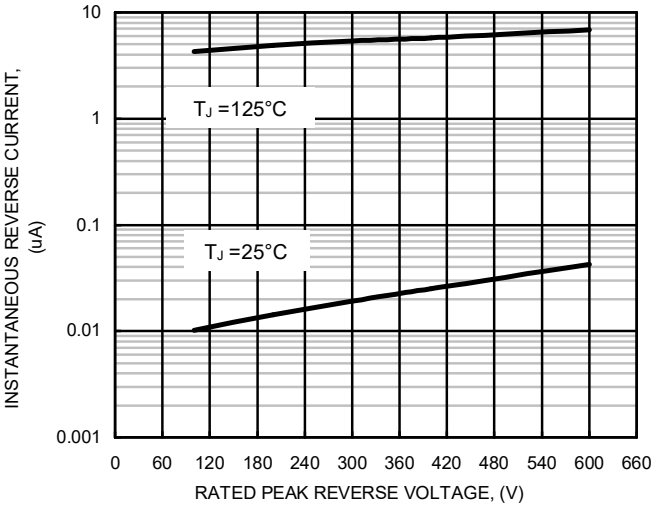


FIG.5 TYPICAL REVERSE CHARACTERISTICS



PACKAGING AND CARRIER DIMENSIONS INFORMATION
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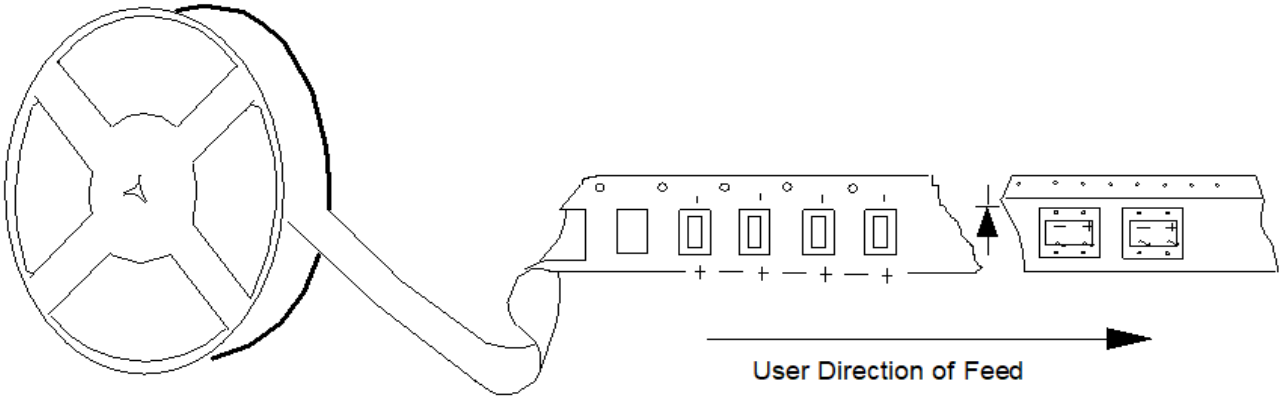
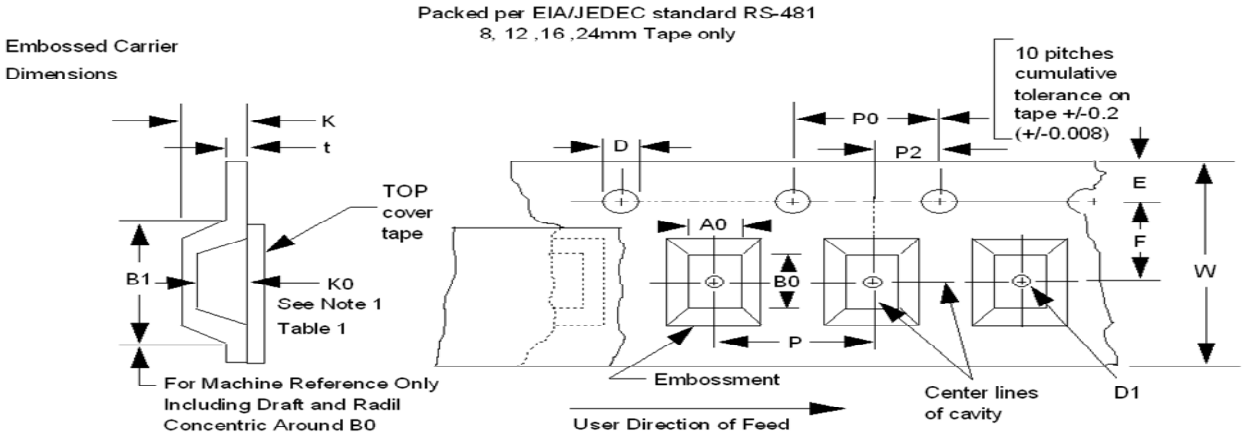
Packaging Information

Polar Units



DEVICE	Q'TY/REEL (PCS)	REEL DIA. (mm)	BOX SIZE (mm)	Q'TY/BOX (PCS)	CARTON SIZE (mm)	Q'TY/CARTON (PCS)
ES1JN	5K	330	340X340X21	5K	350X350X340	60K

Embossed Carrier Dimensions Information



TAPE SIZE	D	E	PO	t(MAX)	W	P	UNIT
12mm	1.55+0.10/-0.0	1.75±0.10	4.0+0.1	0.4	12.0±0.30	4.0±0.1	mm
	B1(MAX)	D1(MIN)	F	K(MAX)	P2	A0B0K0	
	8.2	1.5	5.5±0.1	4.5	2.0±0.05	SEE NOTE 1	

Note 1: A0B0K0 are determined by component size. The clearance between the component and the cavity must be within 0.05 min. to 0.50 max.for 8 mm tape. 0.05 min. to 0.65 max. for 12mm tape. 0.15 min. to 0.90 max. for 16mm tape and 0.05 min. to 1.00 max. for 24 mm tape and larger.

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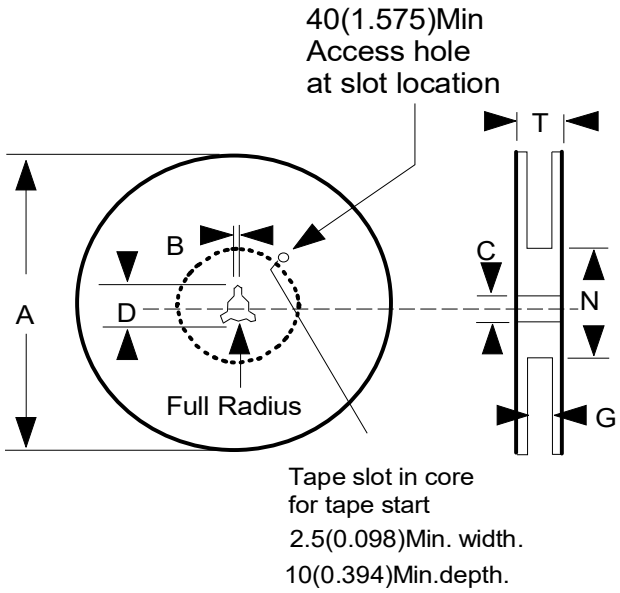

TAPE SIZE	A MAX	B MIN	C	D MIN	N	G	T MAX	UNIT
12mm	178/330	1.5	13.0+/-0.5	20.2	75	12.4+2.0/-0.0	18.4	mm

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