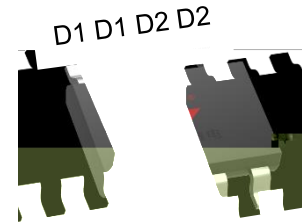


Dual N-Channel Enhancement Mode MOSFET

Feature

- 30V/14A
 $R_{DS(ON)} = 7.1$ @VGS = 10V
 $R_{DS(ON)} = 10.2$ @VGS = 4.5V
- 100% Avalanche Tested
- Reliable and Rugged
- Halogen Free and Green Devices Available
 (RoHS Compliant)

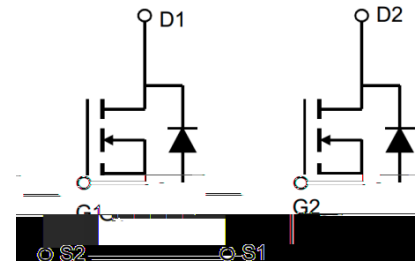
Pin Description



SOP8L

Applications

- Switching application
- Li-battery protection
- DC-DC



Dual N-Channel MOSFET

Ordering and Marking Information

	<p>Package Code S:SOP8L</p> <p>Date Code XYMXXXXXX</p>
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Note: HUAYI halogen free products contain molding compounds/die attach materials and 100% matte tin plate Termination finish; which are fully compliant with RoHS. HUAYI halogen free products meet or exceed the halogen free requirements of IPC/JEDEC J-STD-020 for MSL classification at halogen free peak reflow temperature. HUAYI defines Green to mean halogen free (RoHS compliant) and halogen free (Br or Cl does not exceed 900ppm by weight in homogeneous material and total of Br and Cl does not exceed 1500ppm by weight).

HUAYI reserves the right to make changes, corrections, enhancements, modifications, and improvements to this product and/or to this document at any time without notice.

Absolute Maximum Ratings

Symbol	Parameter		Rating	Unit
Common Ratings (Tc=25°C Unless Otherwise Noted)				
V _{DSS}	Drain-Source Voltage		30	V
V _{GSS}	Gate-Source Voltage		± 20	V
T _J	Junction Temperature Range		-55 to 175	°C
T _{STG}	Storage Temperature Range			°C
I _S	Source Current-Continuous(Body Diode)	Tc=25°C	14	A
Mounted on Large Heat Sink				
I _{DM}	Pulsed Drain Current *	Tc=25°C	42	A
I _D	Continuous Drain Current	Tc=25°C	14	A
		Tc=100°C	10	A
P _D	Maximum Power Dissipation	Tc=25°C	3	W
		Tc=100°C	1.5	W
R _{ΘJA}	Thermal Resistance, Junction-to-Ambient **		50	°C/W
E _{AS}	Single Pulsed-Avalanche Energy ***	L=0.3mH	47	mJ

Note: * Repetitive rating

Electrical Characteristics (Cont.) (T_c =25°C Unle

Typical Operating Characteristics

Figure 1: Power Dissipation

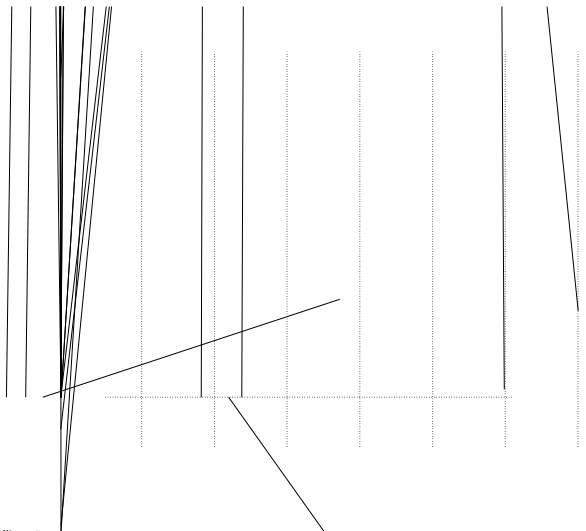


Figure 2: Drain Current

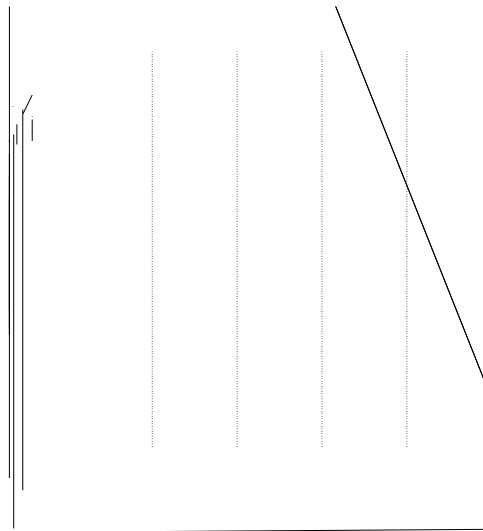


Figure 3: Safe Operation Area

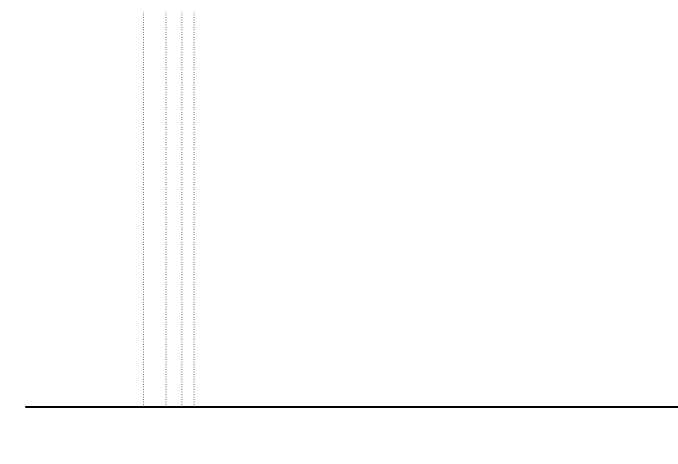


Figure 4: Thermal Transient Impedance

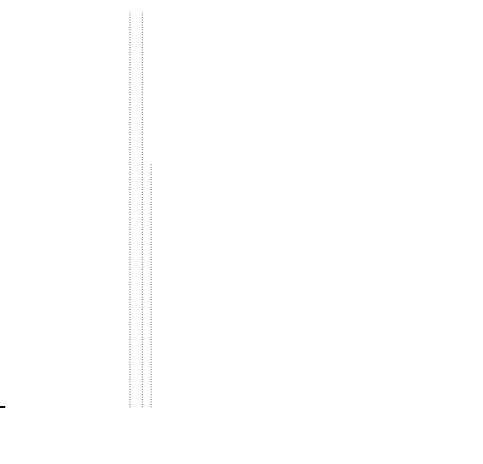


Figure 5: Output Characteristics

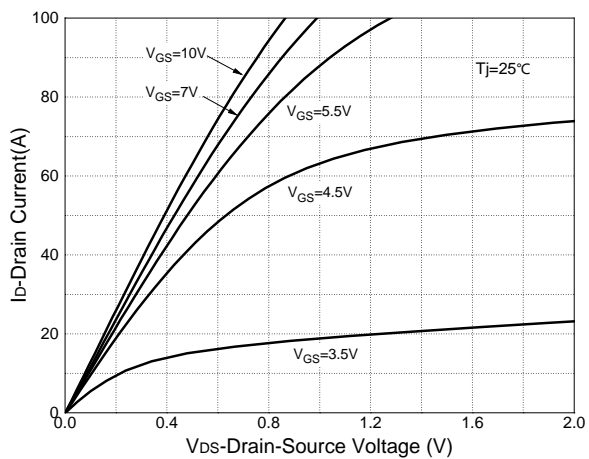
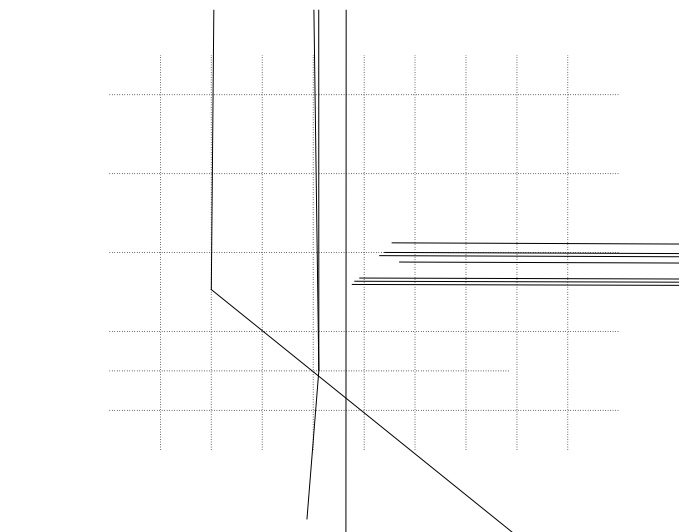


Figure 6: Drain



Typical Operating Characteristics(Cont.)

Figure 7: On-Resistance vs. Temperature

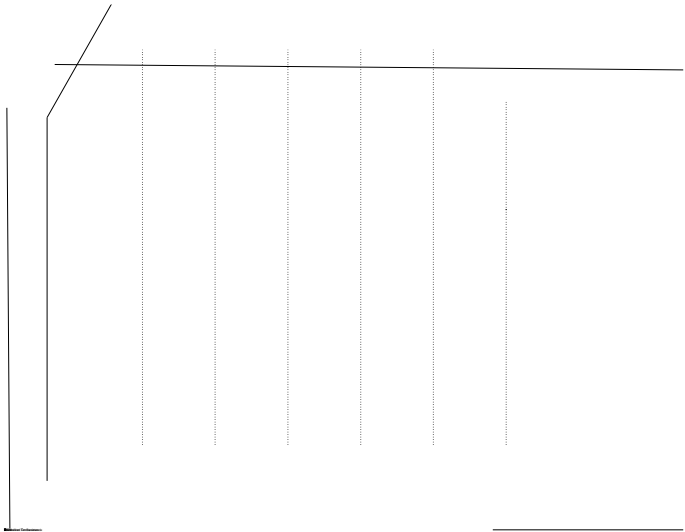


Figure 8: Source-Drain Diode Forward

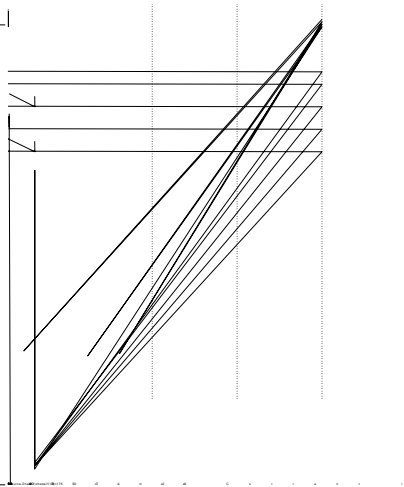


Figure 9: Capacitance Characteristics

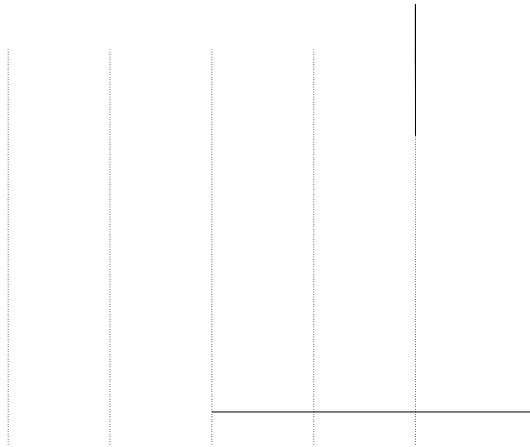
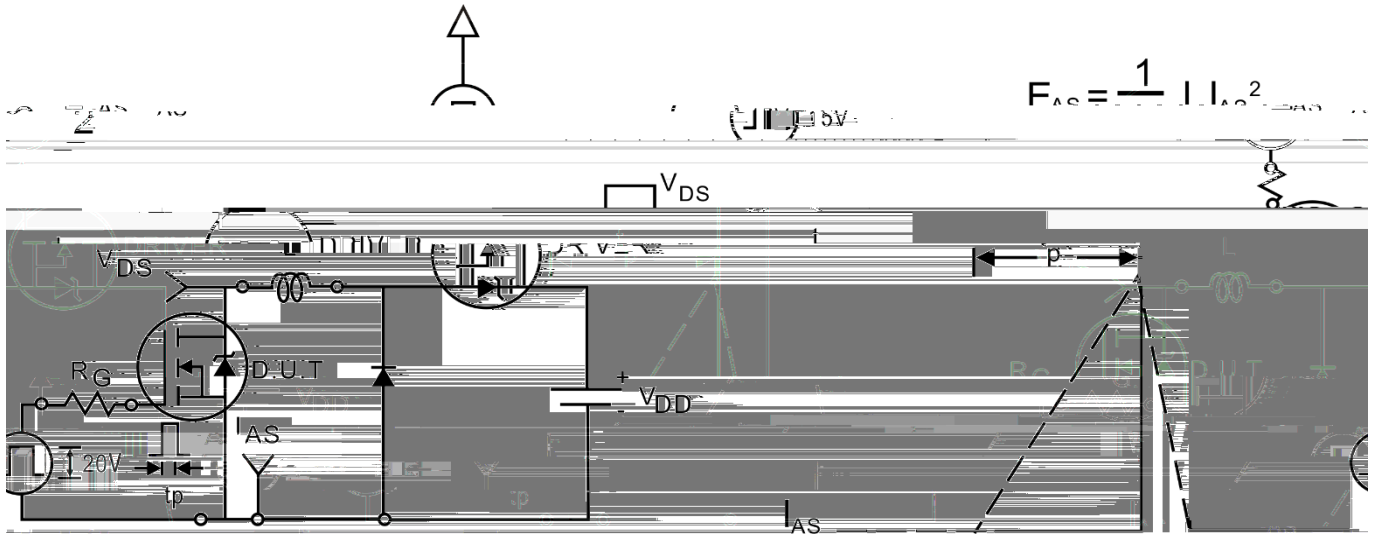


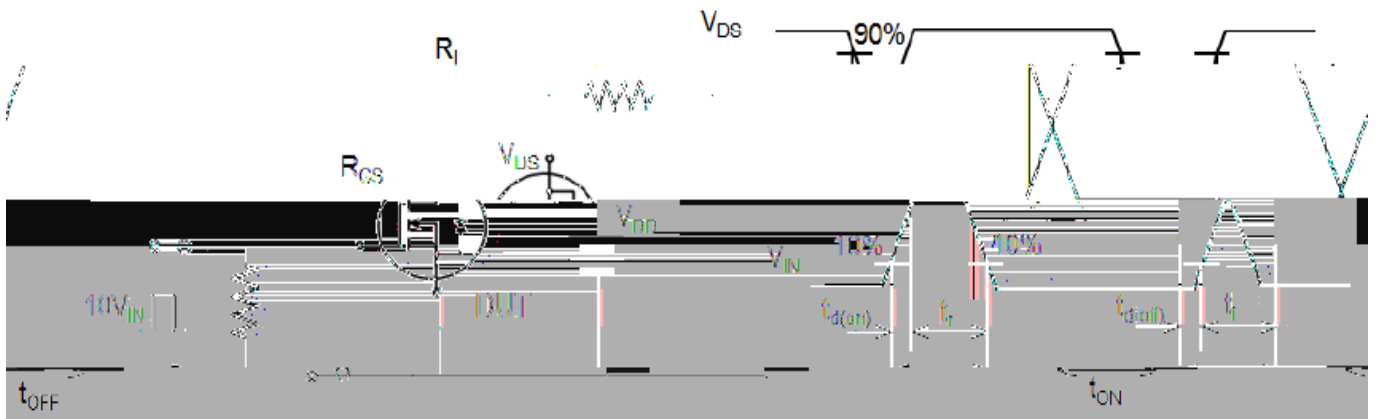
Figure 10: Gate Charge Characteristics



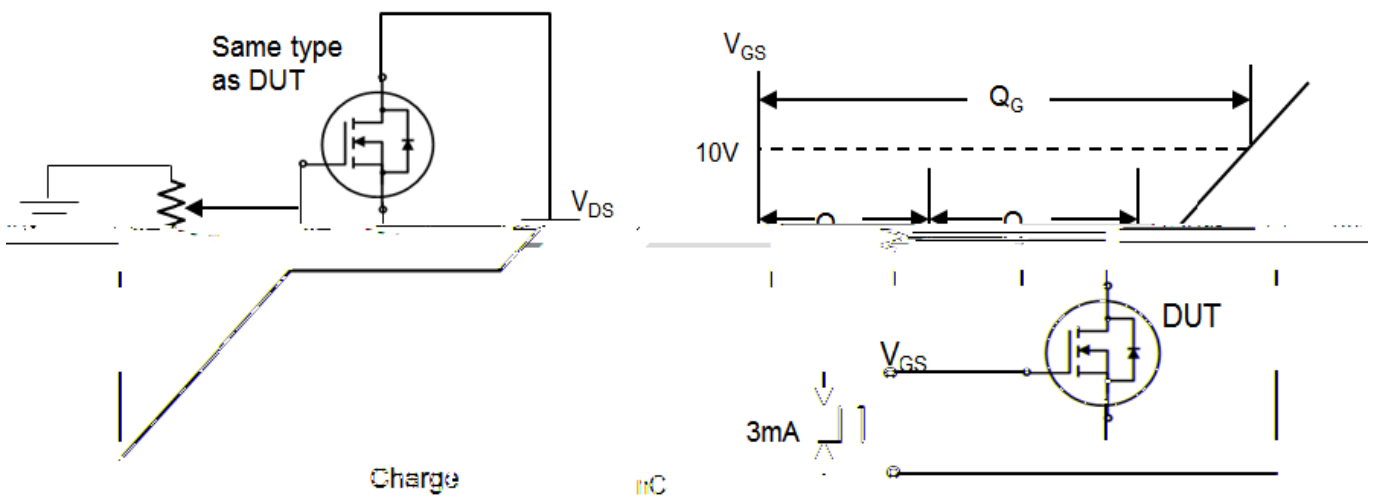
Avalanche Test Circuit



Switching Time Test Circuit



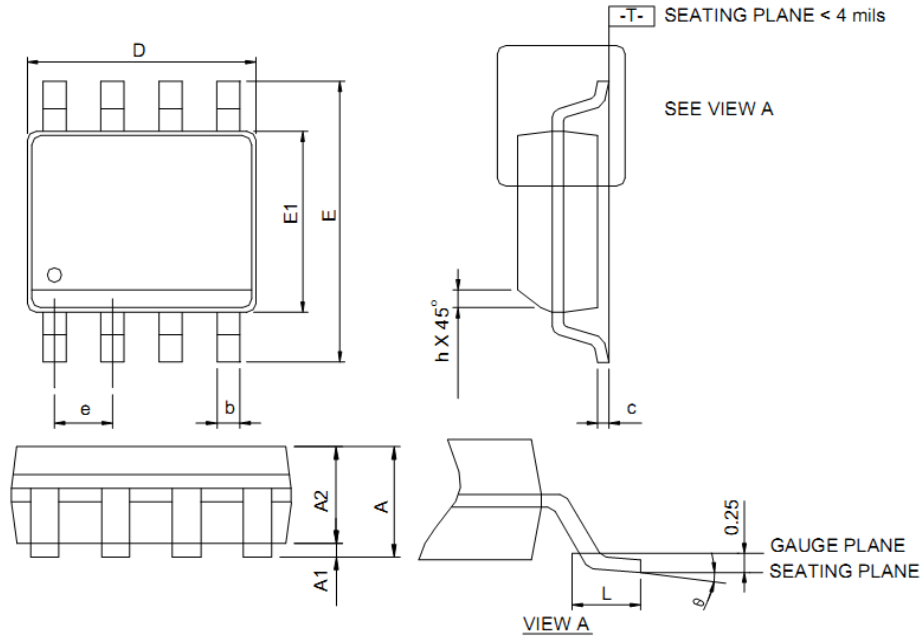
Gate Charge Test Circuit



Device Per Unit

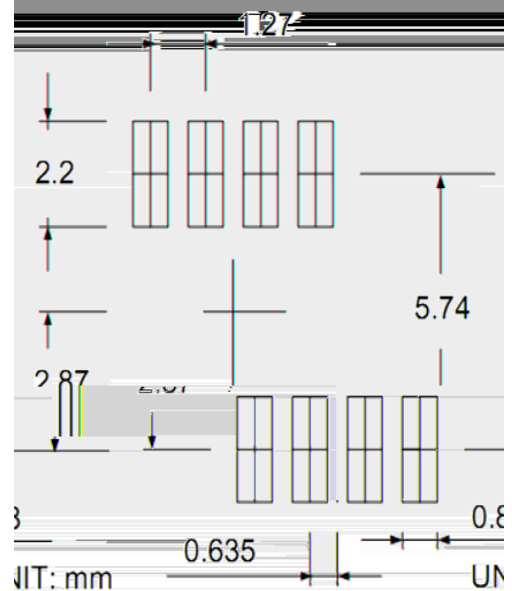
Package Type	Unit	Quantity
SOP8L	Reel	2500

Package Information



SYMBOL	COMMON DIMENSIONS			
	mm		inches	
	MIN	MAX	MIN	MAX
A	-	1.75	-	0.069
A1	0.10	0.25	0.004	0.010
A2	1.25	-	0.049	-
b	0.31	0.51	0.012	0.020
c	0.17	0.25	0.007	0.010
D	4.80	5.00	0.189	0.197
E	5.80	6.20	0.228	0.244
E1	3.80	4.00	0.150	0.157
e	1.27 BSC		0.050 BSC	
h	0.25	0.50	0.010	0.020
L	0.40	1.27	0.016	0.050
	0°	8°	0°	0°

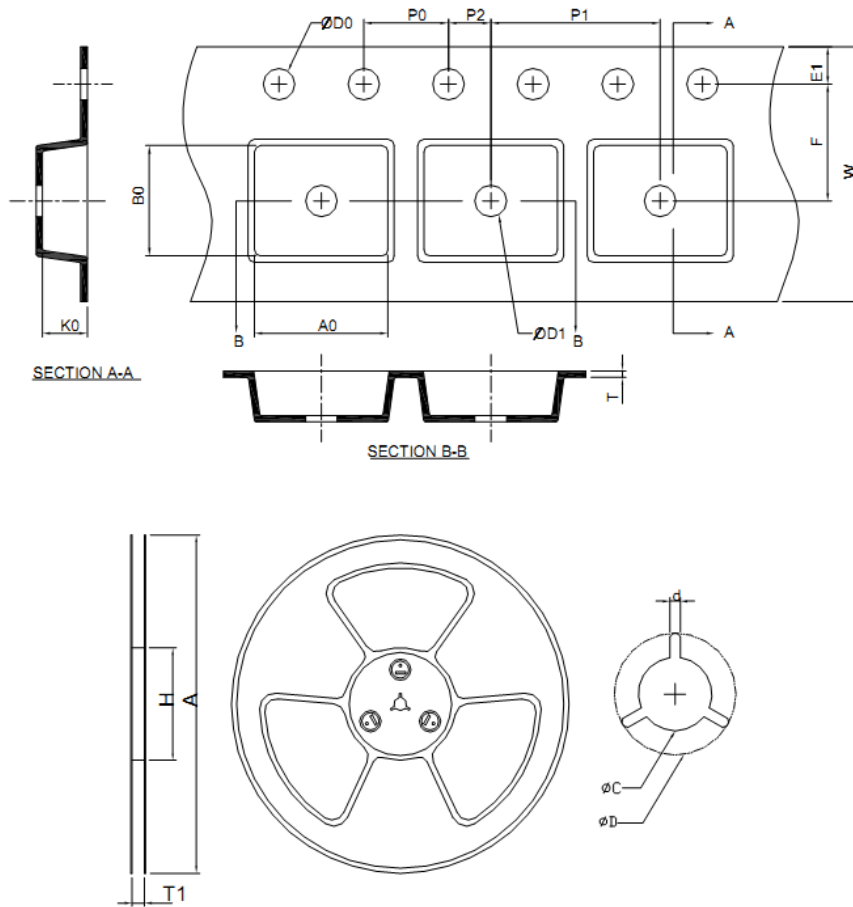
RECOMMENDED LAND PATTERN



Note

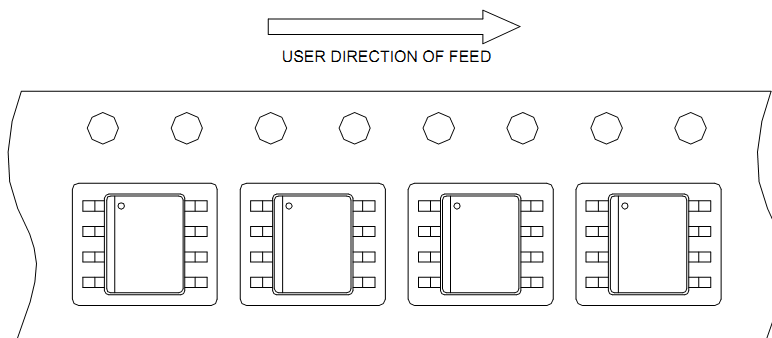
- 1 Follow JEDEC MS-012AA
- 2 protrusions or gate burrs.
- 3 Dimension E -lead flash or protrusions.
Inter-lead flash and protrusions shall not exceed 10 mil per side.

Carrier Tape & Reel Dimensions

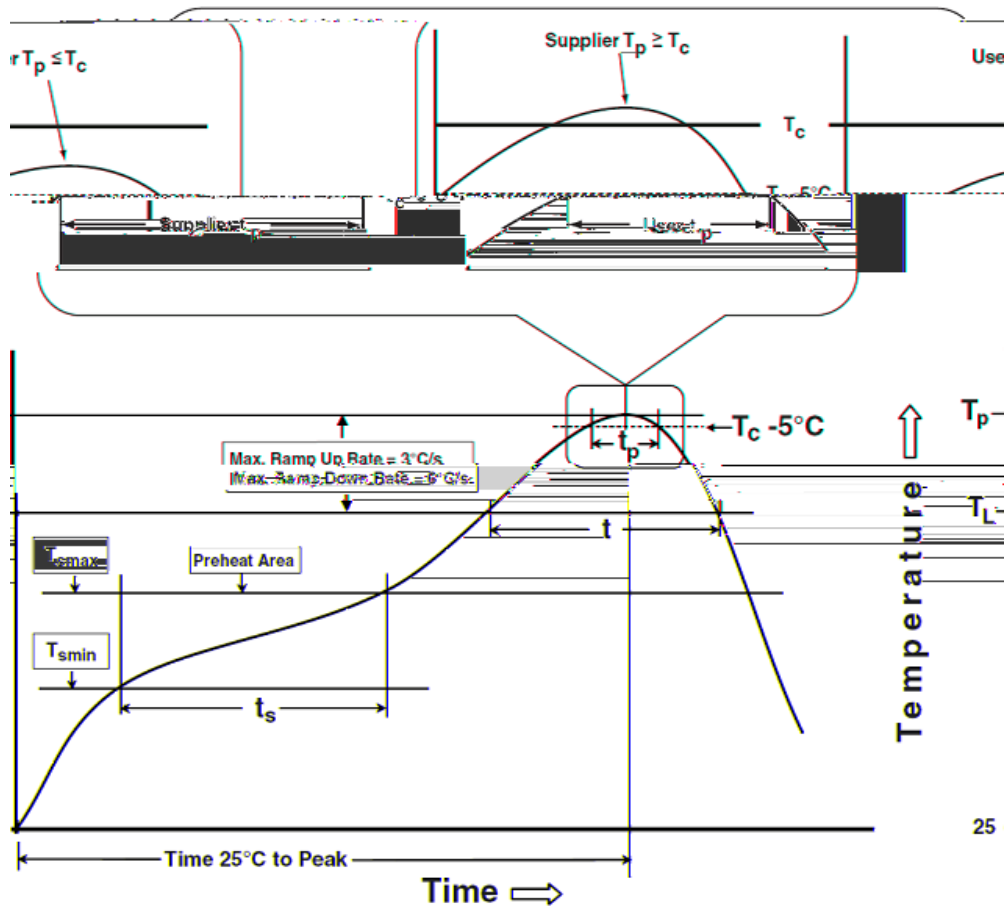


Application	A	H	T1	C	d	D	W	E1	F
SOP8L	330 2.00	50 MIN	12.4+2.00 -0.20	13.0+0.50 -0.20	1.5 MIN	20.2 MIN	12.0 0.30	1.75 0.10	5.5 0.05
	P0	P1	P2	D0	D1	T	A0	B0	K0
	4.0 0.10	8.0 0.10	2.0 0.05	1.5+0.10 -0.00	1.5 MIN	0.6+0.00 -0.40	6.40 0.20	5.20 0.20	2.10 0.20

Taping Direction Information



Classification Profile



Classification Reflow Profiles

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat & Soak		
Temperature min (T_{smin})	100 °C	150 °C
Temperature max (T_{smax})	150 °C	200 °C
Time (T_{smin} to T_{smax}) (t_s)	60-120 seconds	60-120 seconds
Average ramp-up rate (T_{smax} to T_P)	3 °C/second max.	3°C/second max.
Liquidous temperature (T_L)	183 °C	217 °C
Time at liquidous (t_L)	60-150 seconds	60-150 seconds
Peak package body Temperature (T_P)*	See Classification Temp in table 1	See Classification Temp in table 2
Time (t_p)** within 5°C of the specified classification temperature (T_c)	20** seconds	30** seconds
Average ramp-down rate (T_P to T_{smax})	6 °C/second max.	6 °C/second max.
Time 25°C to peak temperature	6 minutes max.	8 minutes max.

*Tolerance for peak profile Temperature (T_P) is defined as a supplier minimum and a user maximum.

** Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.

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