

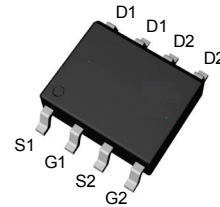
Features

- 30V/8A,
 $R_{DS(ON)} = 17m\Omega(\text{max.}) @ V_{GS} = 10V$
 $R_{DS(ON)} = 24m\Omega(\text{max.}) @ V_{GS} = 4.5V$
- Reliable and Rugged
- Lead Free and Green Devices Available (RoHS Compliant)
- 100% UIS Tested

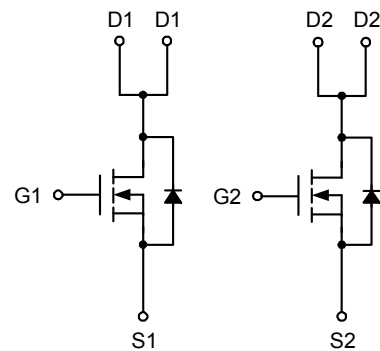
Applications

- Power Management in Notebook Computer, Portable Equipment and Battery Powered Systems.

Pin Description



Top View of SOP-8



N-Channel MOSFET

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Symbol	Parameter	Rating	Unit
V_{DSS}	Drain-Source Voltage	30	V
V_{GSS}	Gate-Source Voltage	± 20	
I_D^a	Continuous Drain Current ($V_{GS}=10V$)	$T_A=25^\circ\text{C}$	8
		$T_A=70^\circ\text{C}$	6.5
I_{DM}^a	300 μs Pulsed Drain Current ($V_{GS}=10V$)	40	A
I_S^a	Diode Continuous Forward Current	1	
I_{AS}^b	Avalanche Current (Single Pulse)	9	
E_{AS}^b	Avalanche Energy, Single Pulse ($L=0.5mH$)	20	mJ
T_J	Maximum Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 150	
P_D^a	Maximum Power Dissipation	$T_A=25^\circ\text{C}$	1.7
		$T_A=70^\circ\text{C}$	1.08
$R_{\theta JA}^a$	Thermal Resistance-Junction to Ambient	$t \leq 10s$	48
		Steady State	74
$R_{\theta JL}$	Thermal Resistance-Junction to Lead	Steady State	32

Note a : Surface Mounted on $1in^2$ pad area, $t \leq 10sec$. Maximum Power dissipation is calculated from $R_{\theta JA}$ (worst) = 62.5°C/W under $t \leq 10s$.

Note b : UIS tested and pulse width limited by maximum junction temperature 150°C (initial temperature $T_J=25^\circ\text{C}$).

Electrical Characteristics ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Symbol	Parameter	Test Conditions	4822			Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_{DS}=250\mu A$	30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=24V, V_{GS}=0V$	-	-	1	μA
		$T_J=85^\circ\text{C}$	-	-	30	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_{DS}=250\mu A$	1.0	1.5	1.9	V
I_{GSS}	Gate Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
$R_{DS(ON)}^a$	Drain-Source On-state Resistance	$V_{GS}=10V, I_{DS}=8A$	-	17.5	27	m Ω
		$V_{GS}=4.5V, I_{DS}=7A$	-	23	30	
		$V_{GS}=2.5V, I_{DS}=7A$	-	35	45	
Gfs	Forward Transconductance	$V_{DS}=5V, I_{DS}=8A$	-	32	-	S
Diode Characteristics						
V_{SD}^a	Diode Forward Voltage	$I_{SD}=1A, V_{GS}=0V$	-	0.7	1.1	V
t_{rr}^b	Reverse Recovery Time	$I_{SD}=8A, dI_{SD}/dt=100A/\mu s$	-	15.5	-	ns
Q_{rr}^b	Reverse Recovery Charge		-	6.5	-	nC

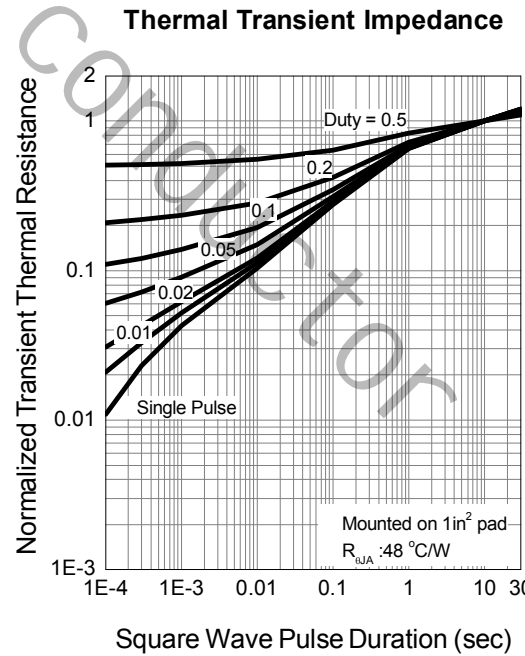
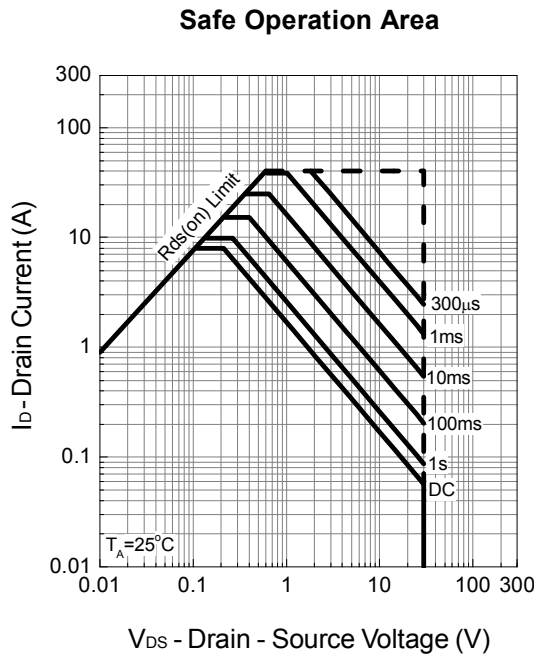
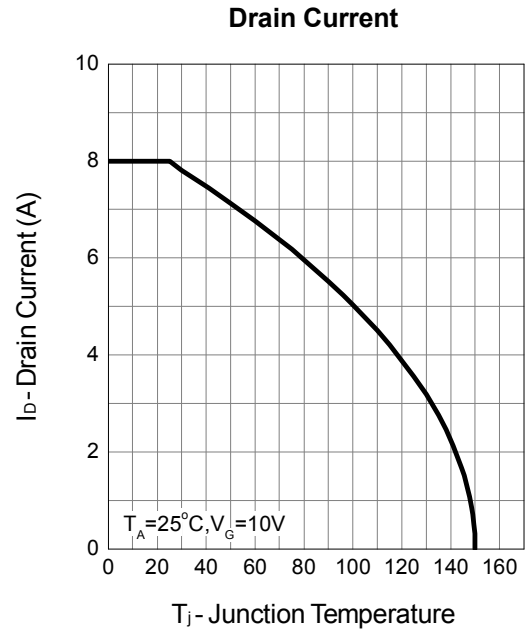
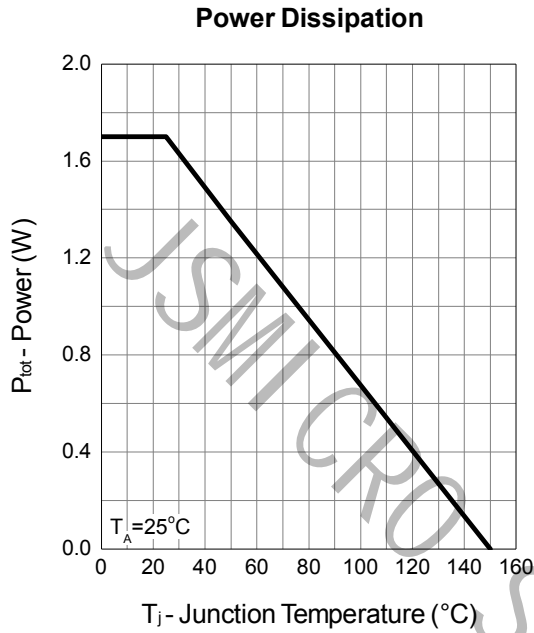
Electrical Characteristics (Cont.) ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Symbol	Parameter	Test Conditions	4822			Unit
			Min.	Typ.	Max.	
Dynamic Characteristics^b						
R_G	Gate Resistance	$V_{GS}=0V, V_{DS}=0V, F=1\text{MHz}$	1.3	1.7	2.3	Ω
C_{iss}	Input Capacitance	$V_{GS}=0V,$ $V_{DS}=15V,$ Frequency=1.0MHz	-	780	-	pF
C_{oss}	Output Capacitance		-	95	-	
C_{rss}	Reverse Transfer Capacitance		-	57	-	
$t_{d(ON)}$	Turn-on Delay Time	$V_{DD}=15V, R_L=15\Omega,$ $I_{DS}=1A, V_{GEN}=10V,$ $R_G=6\Omega$	-	5.9	10	ns
t_r	Turn-on Rise Time		-	10	17	
$t_{d(OFF)}$	Turn-off Delay Time		-	17	35	
t_f	Turn-off Fall Time		-	4	9	
Gate Charge Characteristics^b						
Q_g	Total Gate Charge	$V_{DS}=15V, V_{GS}=10V,$ $I_{DS}=8A$	-	10.2	14	nC
	Total Gate Charge		-	5.3	-	
Q_{gth}	Threshold Gate Charge	$V_{DS}=15V, V_{GS}=4.5V,$ $I_{DS}=8A$	-	0.78	-	
Q_{gs}	Gate-Source Charge		-	1.7	-	
Q_{gd}	Gate-Drain Charge		-	2.2	-	

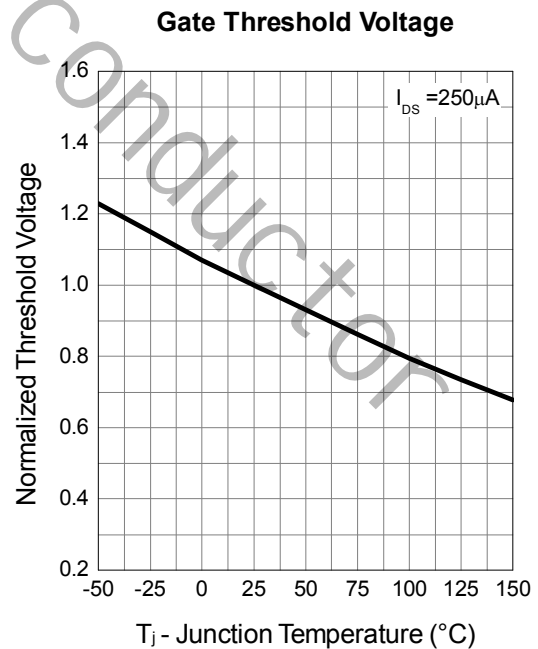
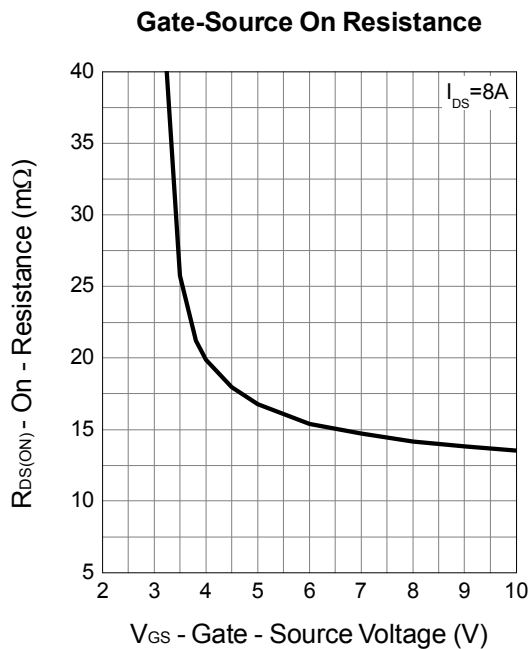
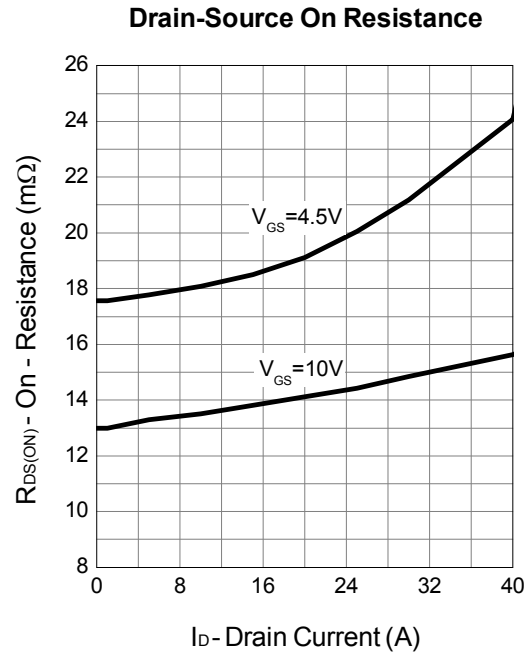
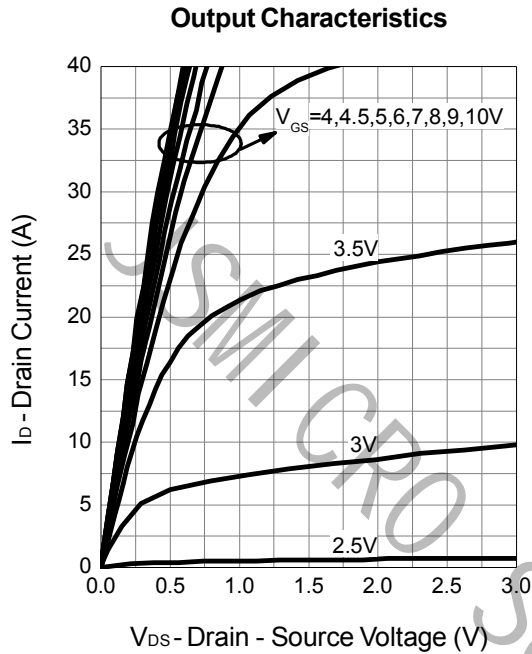
 Note a : Pulse test ; pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$.

Note b : Guaranteed by design, not subject to production testing.

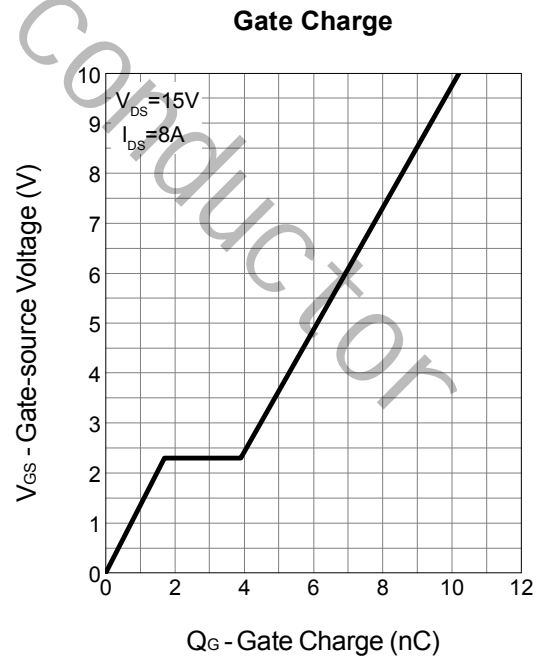
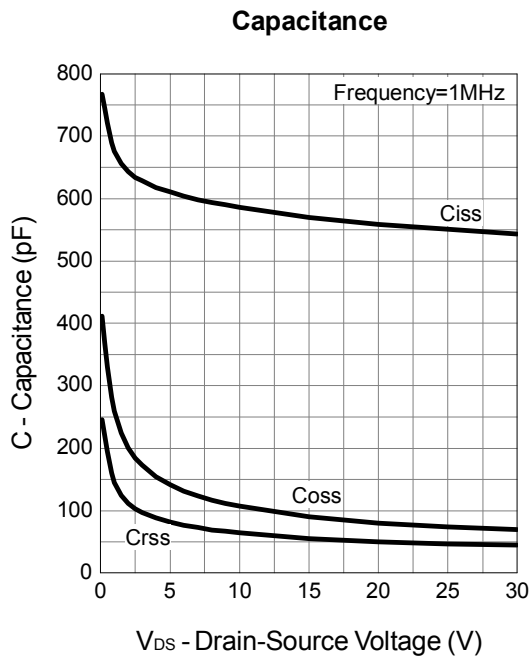
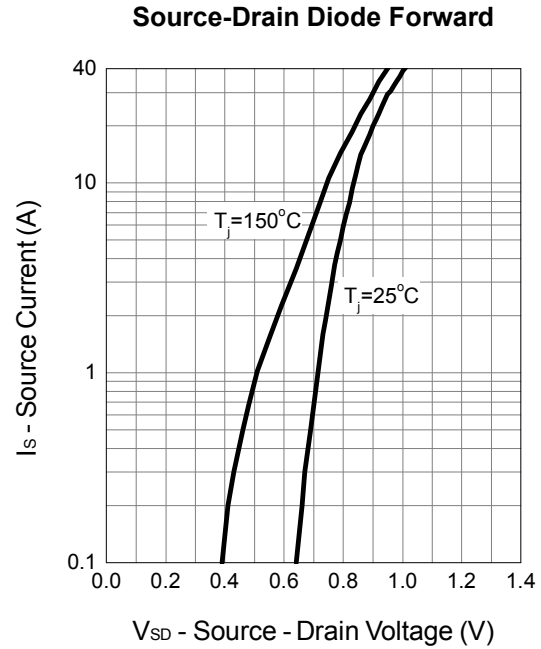
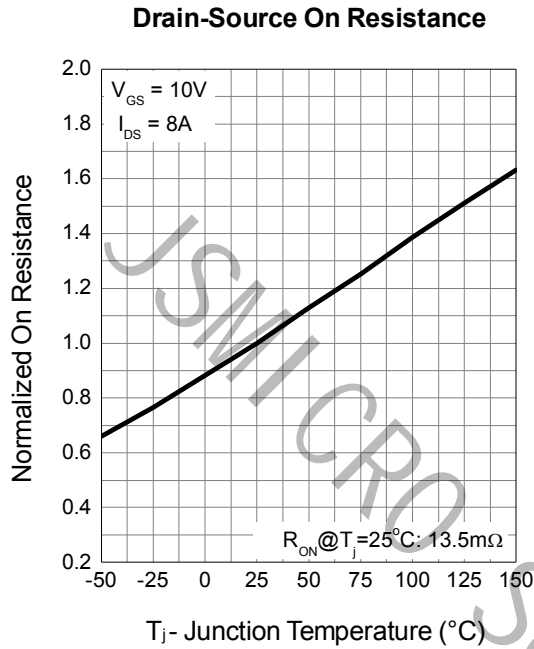
Typical Operating Characteristics



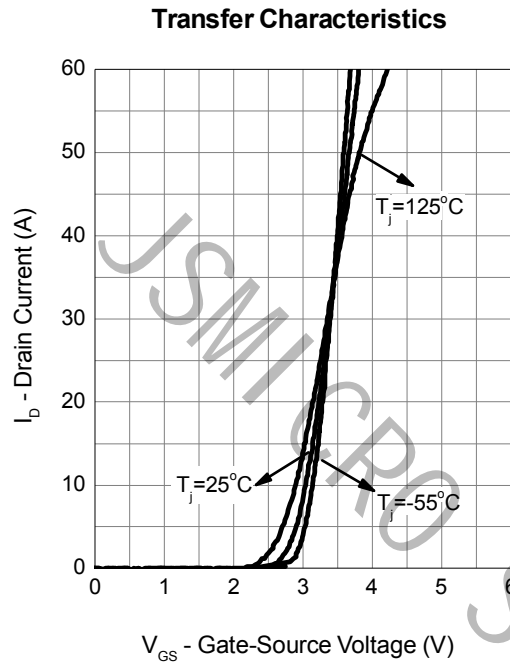
Typical Operating Characteristics (Cont.)



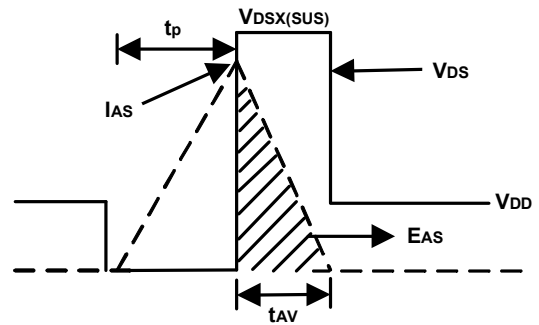
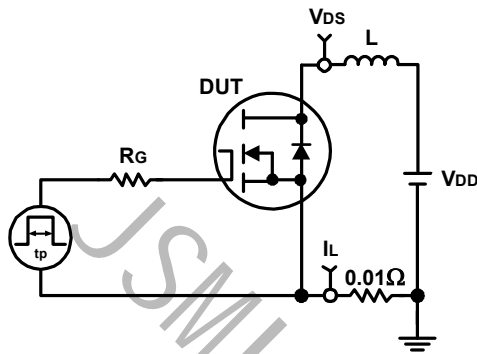
Typical Operating Characteristics (Cont.)



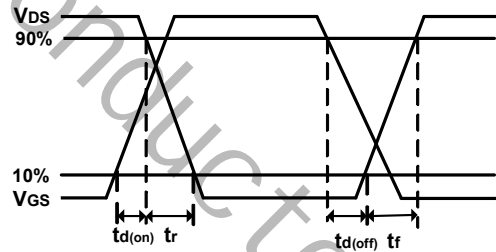
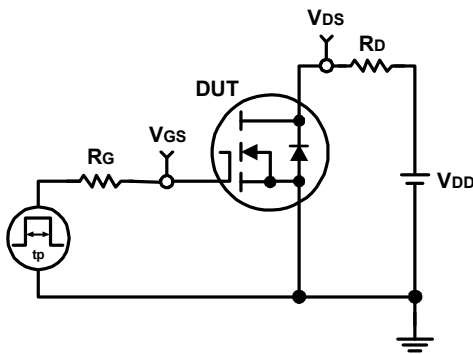
Typical Operating Characteristics (Cont.)



Avalanche Test Circuit and Waveforms

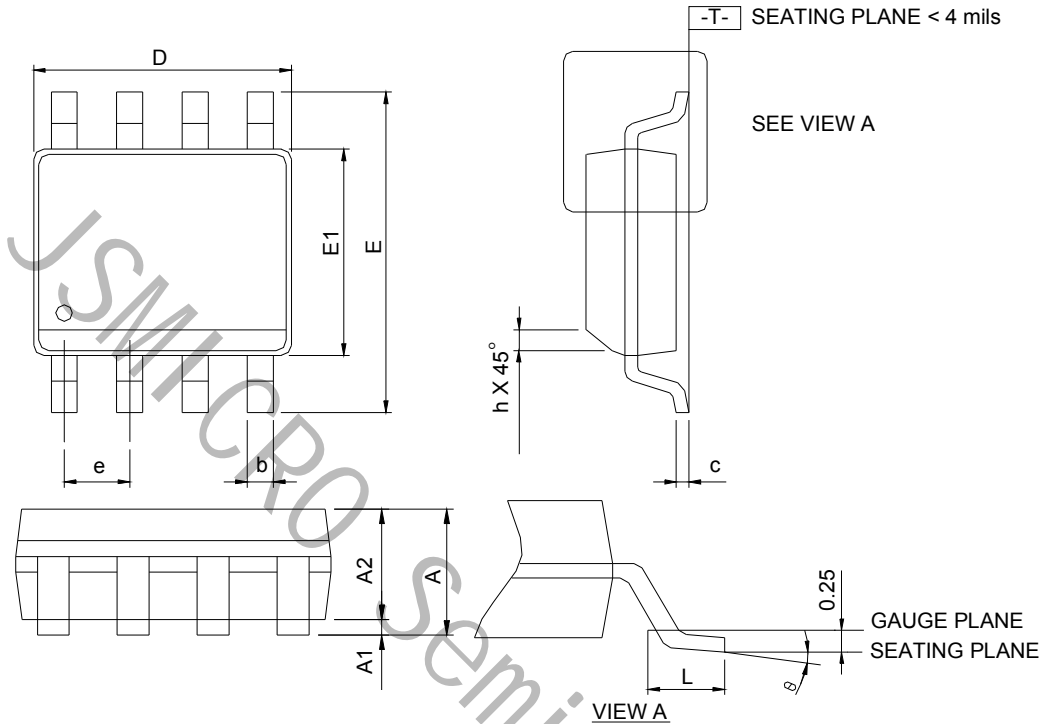


Switching Time Test Circuit and Waveforms



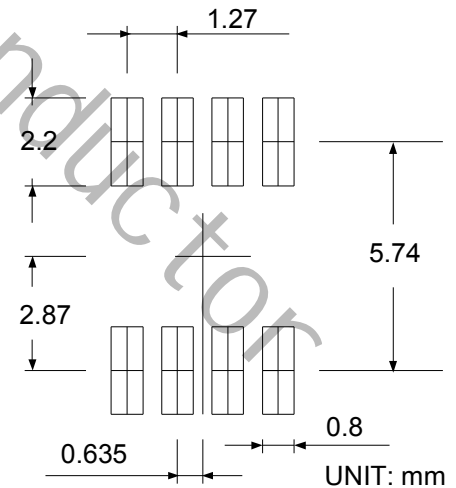
Package Information

SOP-8



DIMENSIONS	SOP-8			
	MILLIMETERS		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
θ	0°	8°	0°	8°

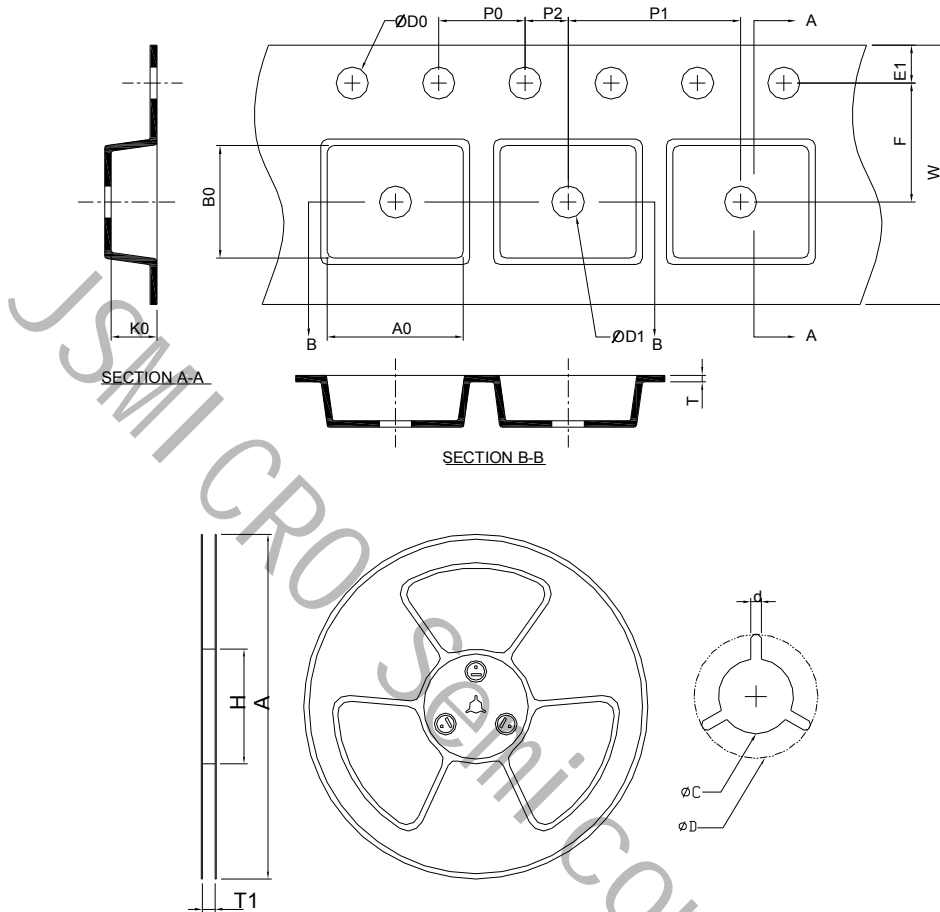
RECOMMENDED LAND PATTERN



Note: 1. Follow JEDEC MS-012 AA.

- Dimension "D" does not include mold flash, protrusions or gate burrs. Mold flash, protrusion or gate burrs shall not exceed 6 mil per side.
- Dimension "E" does not include inter-lead flash or protrusions. Inter-lead flash and protrusions shall not exceed 10 mil per side.

Carrier Tape & Reel Dimensions

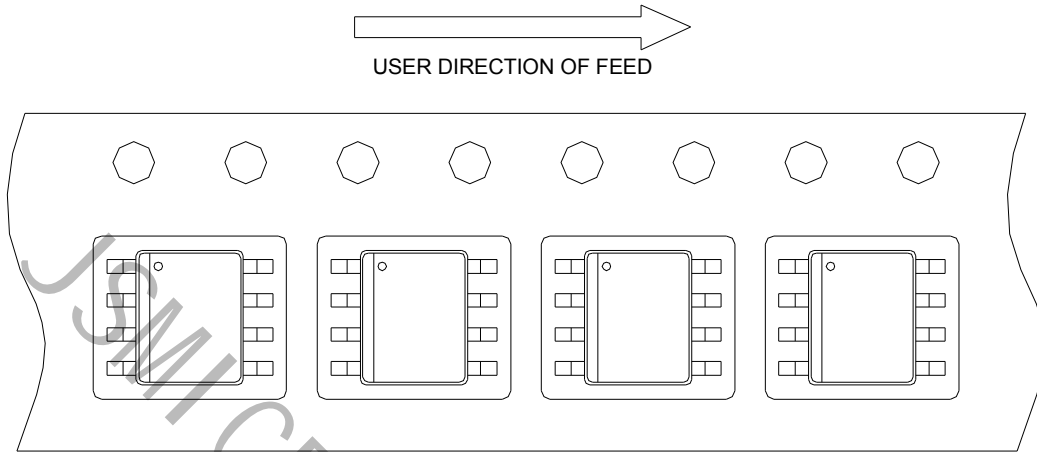


Application	A	H	T1	C	d	D	W	E1	F
SOP-8 3000/reel	330.0 ± 2.00	50 MIN.	$12.4 + 2.00$ -0.00	$13.0 + 0.50$ -0.20	1.5 MIN.	20.2 MIN.	12.0 ± 0.30	1.75 ± 0.10	5.5 ± 0.05
	P0	P1	P2	D0	D1	T	A0	B0	K0
	4.0 ± 0.10	8.0 ± 0.10	2.0 ± 0.05	$1.5 + 0.10$ -0.00	1.5 MIN.	$0.6 + 0.00$ -0.40	6.40 ± 0.20	5.20 ± 0.20	2.10 ± 0.20

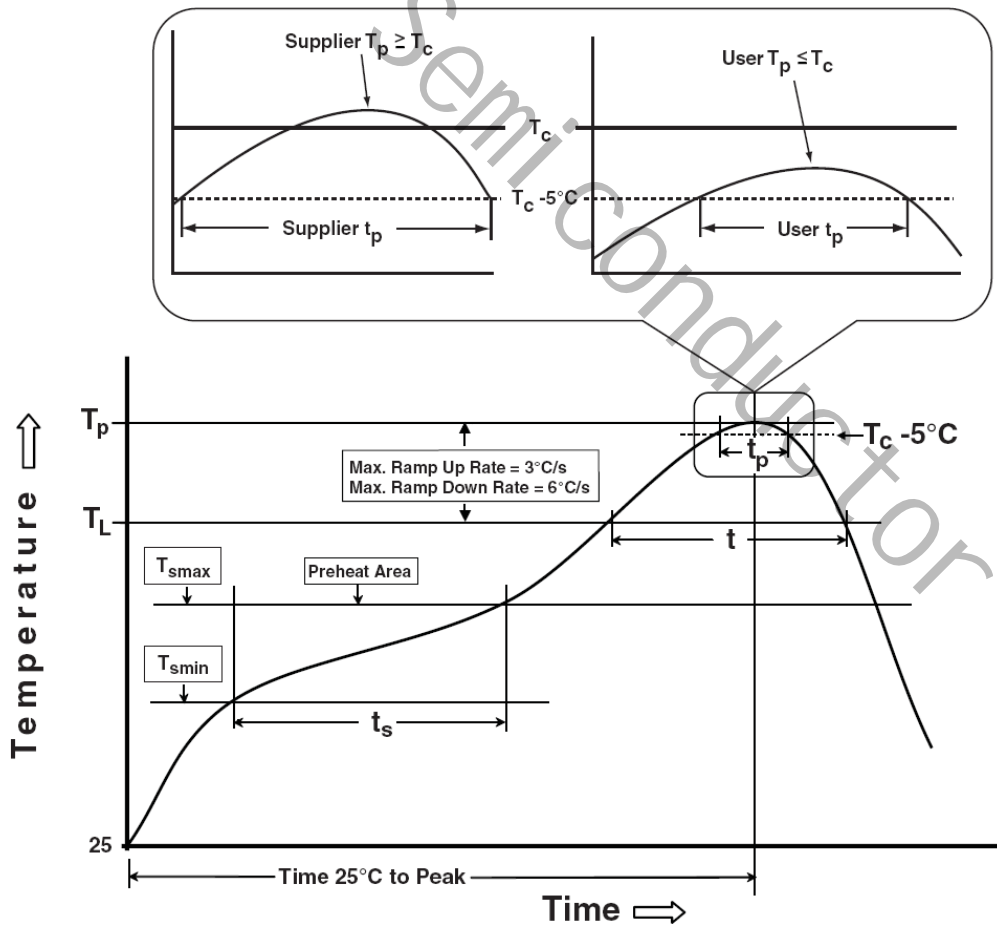
(mm)

Taping Direction Information

SOP-8



Classification Profile



X-ON Electronics

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[DMN2990UFB-7B](#) [SSM3K35CT,L3F](#) [IPLK60R1K0PFD7ATMA1](#) [2N7002W-G](#) [MCAC30N06Y-TP](#) [IPWS65R035CFD7AXKSA1](#)
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