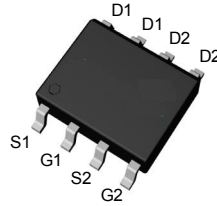


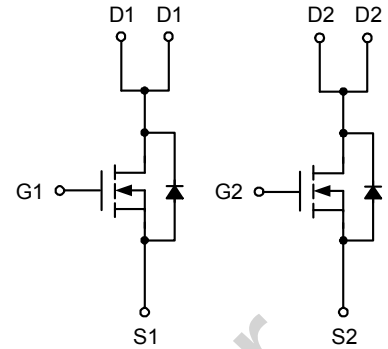
Features

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

Pin Description



Top View of SOP-8



N-Channel MOSFET

Applications

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

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

Symbol	Parameter	Test Conditions	4842			Unit
			Min.	Typ.	Max.	
Dynamic Characteristics ^b						
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, F=1MHz	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 =15Ω, I _{DS} =1A, V _{GEN} =10V, R _G =6Ω	-	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 $\leq 300 \mu s$, duty cycle $\leq 2\%$.

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

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	A
		$T_A=70^\circ\text{C}$ 6.5	
I_{DM}^a	300 μs Pulsed Drain Current ($V_{GS}=10V$)	40	
I_S^a	Diode Continuous Forward Current	1	
I_{AS}^b	Avalanche Current (Single Pulse)	9	mJ
E_{AS}^b	Avalanche Energy, Single Pulse ($L=0.5\text{mH}$)	20	
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	W
		$T_A=70^\circ\text{C}$ 1.08	
$R_{\theta JA}^a$	Thermal Resistance-Junction to Ambient	$t \leq 10\text{s}$ 48	$^\circ\text{C/W}$
		Steady State 74	
$R_{\theta JL}$	Thermal Resistance-Junction to Lead	Steady State 32	

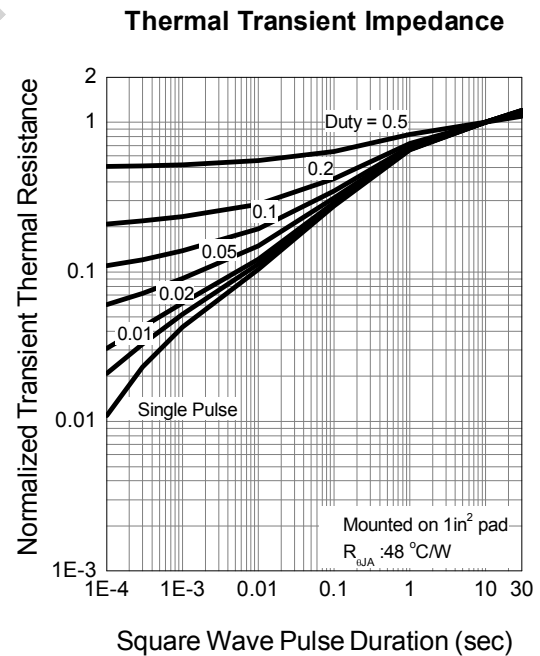
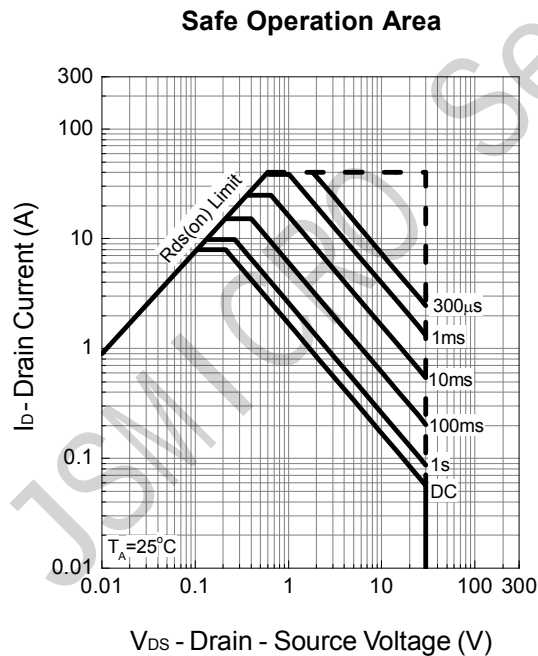
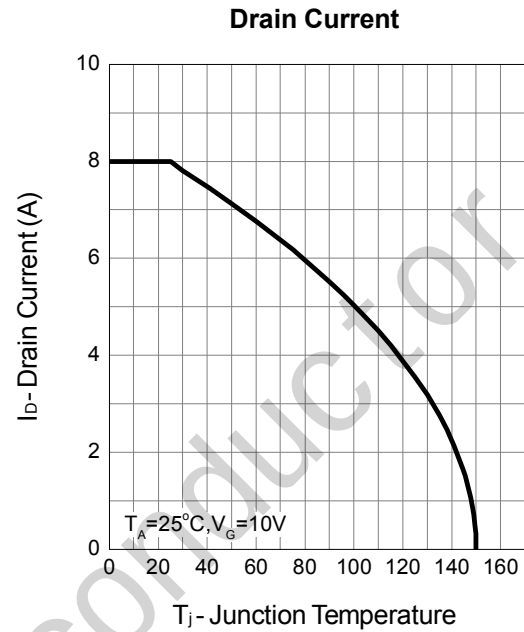
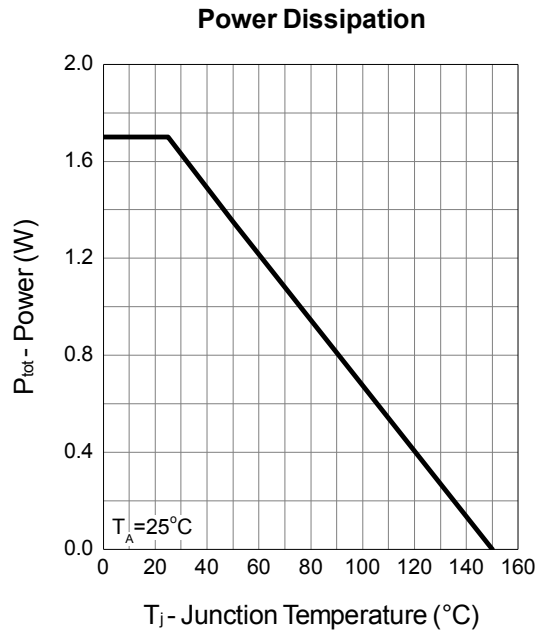
Note a : Surface Mounted on 1in^2 pad area, $t \leq 10\text{sec}$. Maximum Power dissipation is calculated from $R_{\theta JA}$ (worst) = 62.5°C/W under $t \leq 10\text{s}$.

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)

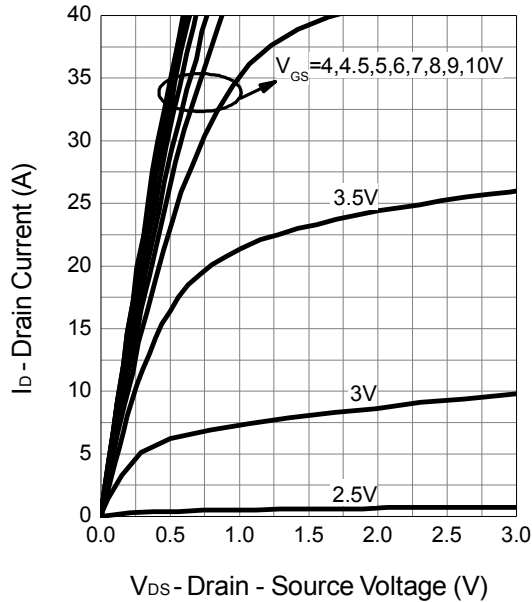
Symbol	Parameter	Test Conditions	4842			Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250μA	30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =24V, V _{GS} =0V	-	-	1	μA
		T _J =85°C	-	-	30	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	1.0	1.5	1.9	V
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)} ^a	Drain-Source On-state Resistance	V _{GS} =10V, I _{DS} =8A	-	17.5	27	mΩ
		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/μs	-	15.5	-	ns
Q _{rr} ^b	Reverse Recovery Charge		-	6.5	-	nC

Typical Operating Characteristics

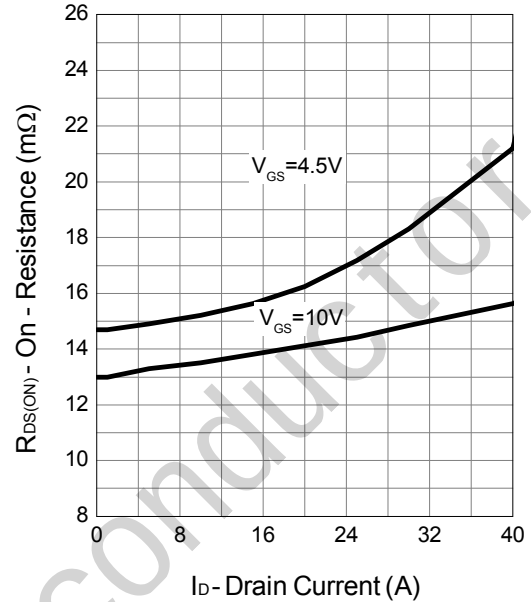


Typical Operating Characteristics (Cont.)

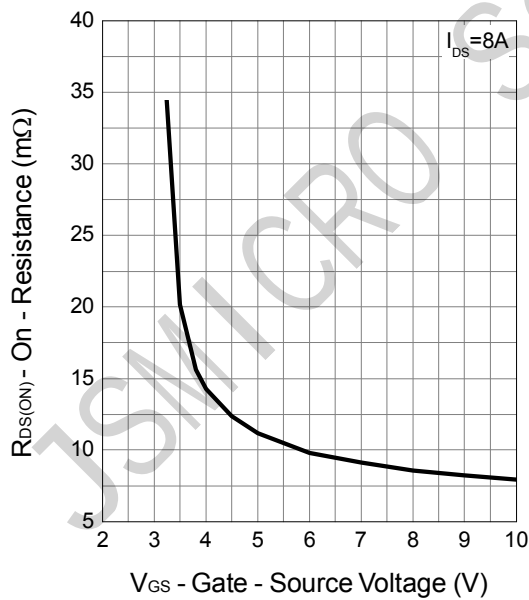
Output Characteristics



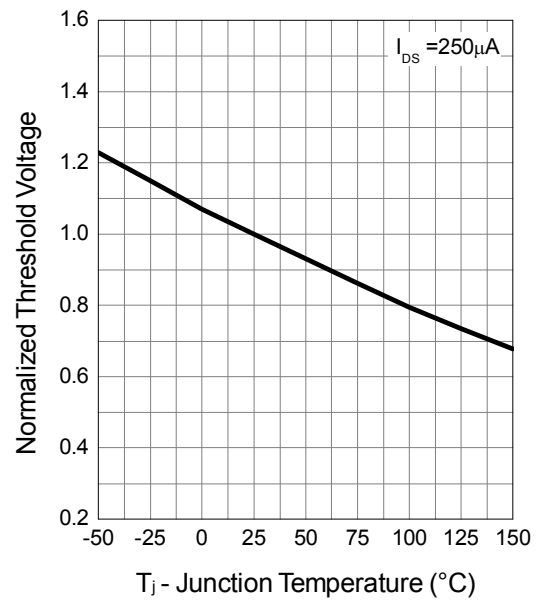
Drain-Source On Resistance



Gate-Source On Resistance

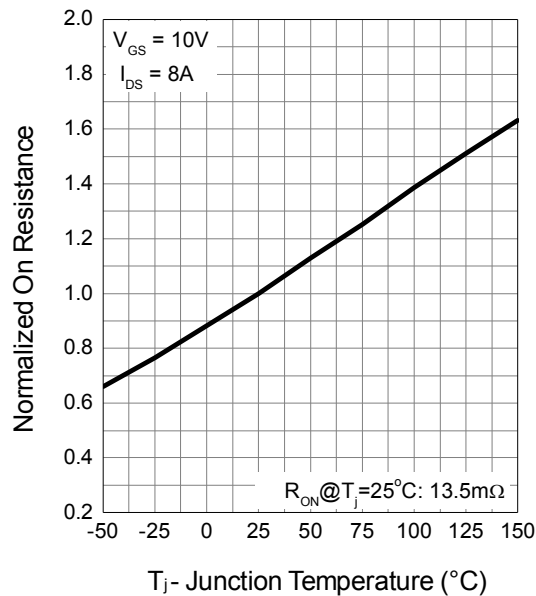


Gate Threshold Voltage

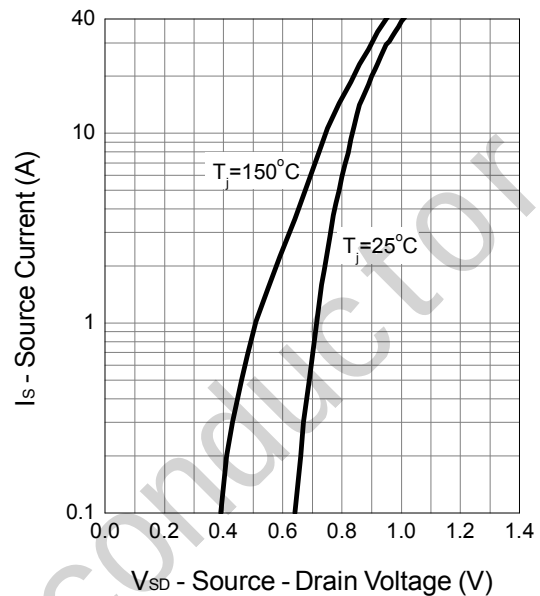


Typical Operating Characteristics (Cont.)

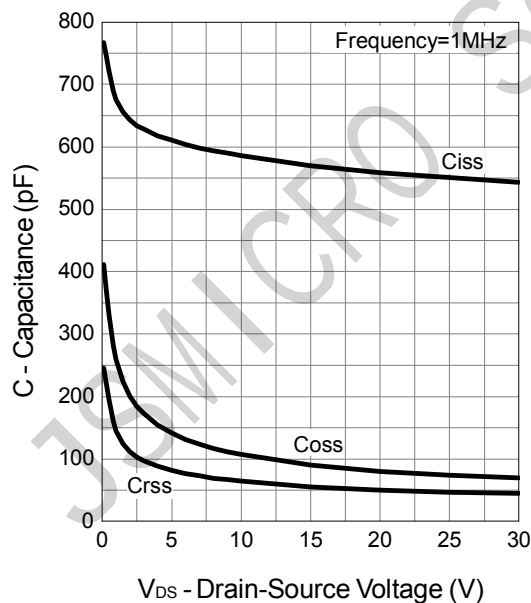
Drain-Source On Resistance



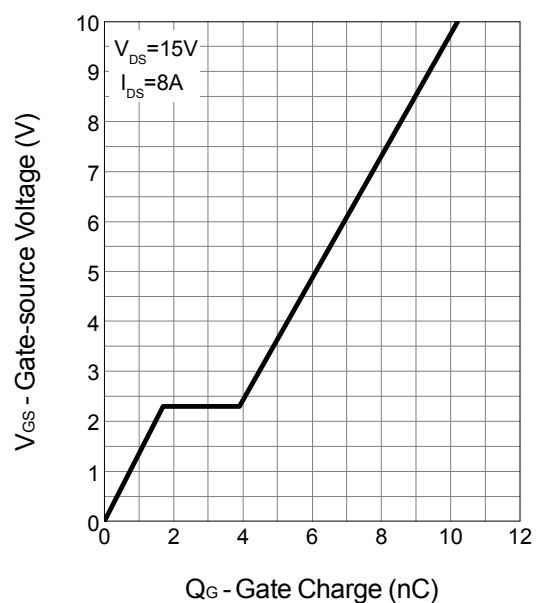
Source-Drain Diode Forward



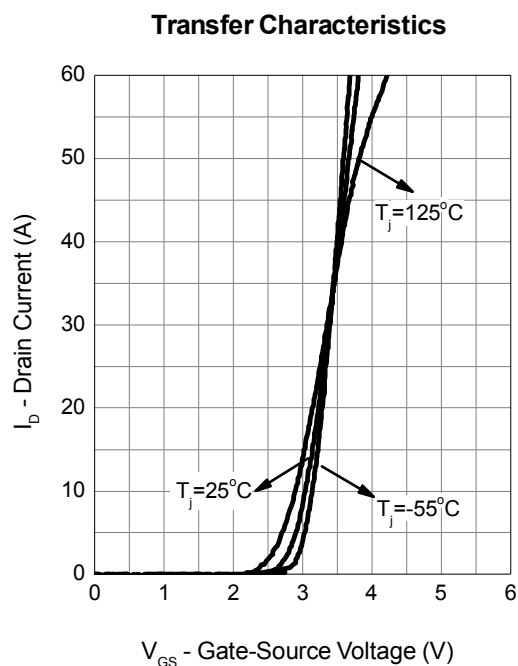
Capacitance



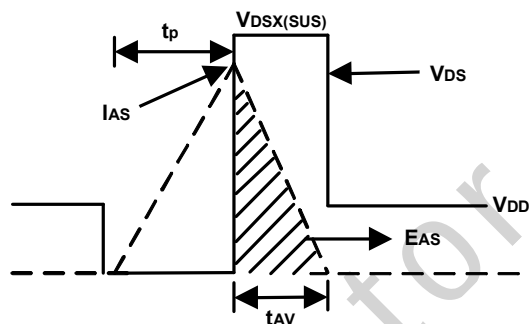
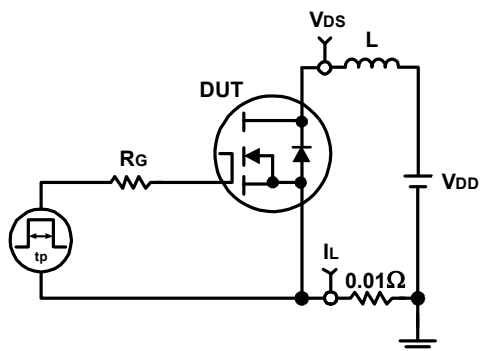
Gate Charge



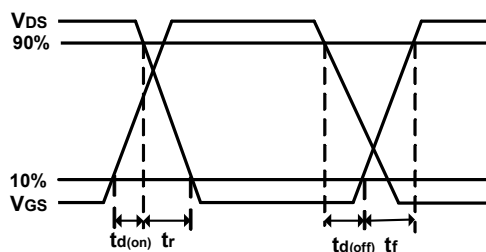
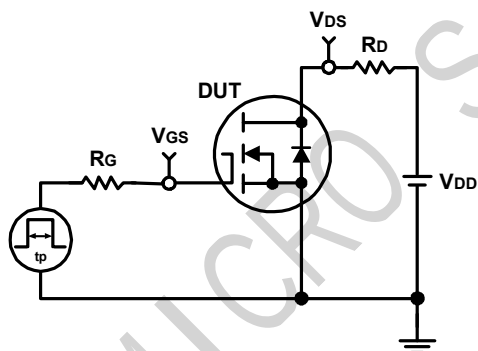
Typical Operating Characteristics (Cont.)



Avalanche Test Circuit and Waveforms

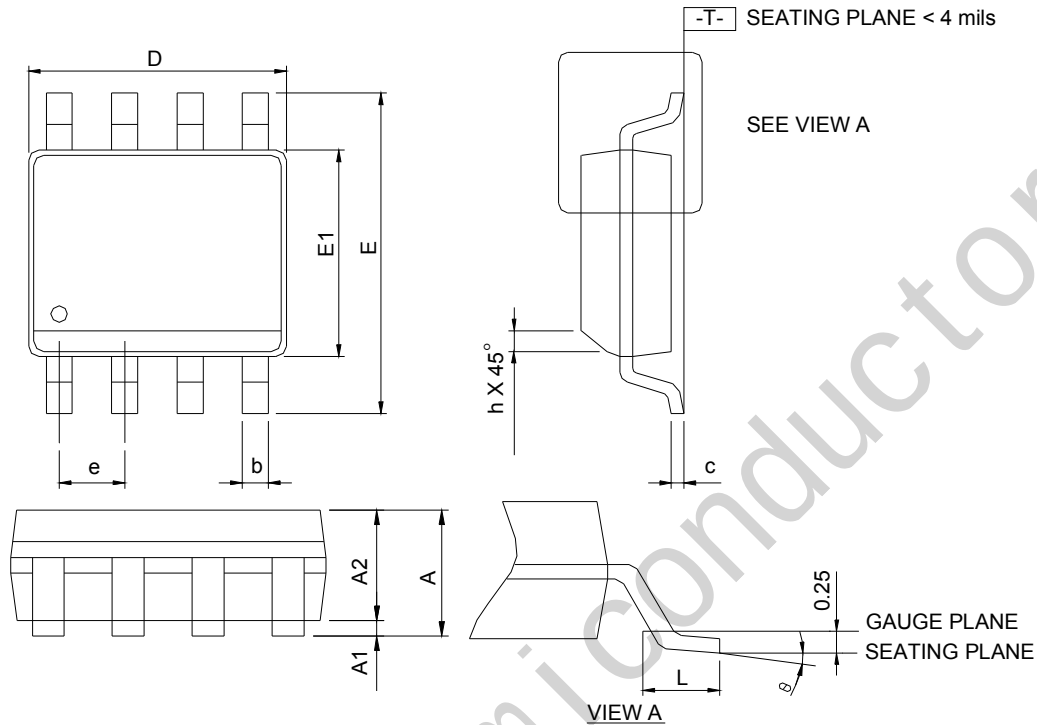


Switching Time Test Circuit and Waveforms



Package Information

SOP-8



	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°

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.

RECOMMENDED LAND PATTERN

