



## N-Channel Enhancement Mode Field Effect Transistor

### Product Summary

$V_{DS}$	60V
$I_D$	340mA
$R_{DS(ON)}$ ( at $V_{GS}=10V$ )	2.5ohm
$R_{DS(ON)}$ ( at $V_{GS}=4.5V$ )	3.0ohm

### General Description

Trench Power MV MOSFET technology  
Voltage controlled small signal switch  
Low input Capacitance  
Fast Switching Speed  
Low Input / Output Leakage

### Applications

Battery operated systems  
Solid-state relays  
Direct logic-level interface TTL/CMOS

### Absolute Maximum Ratings ( $T_A=25$ unless otherwise noted)

Parameter	Symbol	Limit	Unit	
Drain-source Voltage	$V_{DS}$	60	V	
Gate-source Voltage	$V_{GS}$	$\pm 30$	V	
Drain Current	$I_D$	$T_A=25$ @ Steady State	340	mA
		$T_A=70$ @ Steady State	272	
Pulsed Drain Current <sup>A</sup>	$I_{DM}$	1.5	A	
Total Power Dissipation @ $T_A=25$	$P_D$	150	mW	
Thermal Resistance Junction-to-Ambient @ Steady State <sup>B</sup>	$R_{JA}$	833	/ W	
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 +150		

### Ordering Information

PREFERRED P/N	PACKING CODE	
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Electrical Characteristics ( $T_J=25$  unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250$	60			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$			1	
Gate-Body Leakage Current	$I_{GSS1}$	$V_{GS}=\pm 30V, V_{DS}=0V$			$\pm 100$	nA
	$I_{GSS2}$	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 50$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250$	1	1.6	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=300mA$		1.2	2.5	
		$V_{GS}=4.5V, I_D=200mA$		1.3	3.0	
Forward Transconductance	$g_{fs}$	$V_{DS}=10V, I_D=200mA$	80			ms
Diode Forward Voltage	$V_{SD}$	$I_S=300mA, V_{GS}=0V$			1.2	V
Maximum Body-Diode Continuous Current	$I_S$				340	mA
<b>Dynamic Parameters</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=30V, V_{GS}=0V, f=1MHz$		27.5		pF
Output Capacitance	$C_{oss}$			2.75		
Reverse Transfer Capacitance	$C_{rss}$			1.9		
<b>Switching Parameters</b>						
Total Gate Charge	$Q_g$	$V_{GS}=10V, V_{DS}=30V, I_D=0.3A$		1.6		nC
Gate-Source Charge	$Q_{gs}$			0.47		
Gate-Drain Charge	$Q_{gd}$			0.25		
Reverse Recovery Charge	$Q_{rr}$	$I_F=0.3A, di/dt=-100A/us$		2.5		
Reverse Recovery Time	$t_{rr}$			11.5		
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DD}=30V, I_D=300mA, R_{GEN}=6$		3.3		ns
Turn-on Rise Time	$t_r$			19		
Turn-off Delay Time	$t_{D(off)}$			9.6		
Turn-off fall Time	$t_f$			49		

A. Pulse Test: Pulse Width 300us, Duty cycle 2%.

B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.



Figure1. Output Characteristics

Figure2. Transfer Characteristics

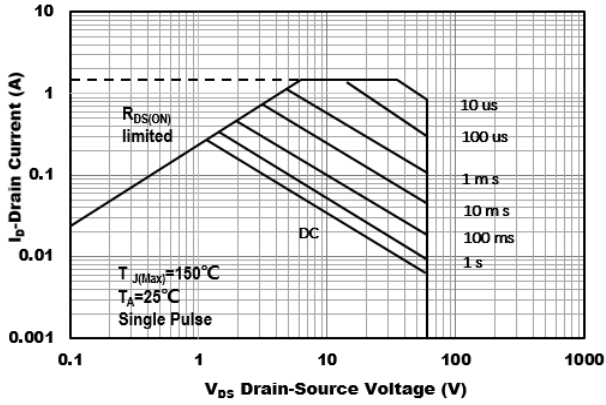


Figure7. Safe Operation Area

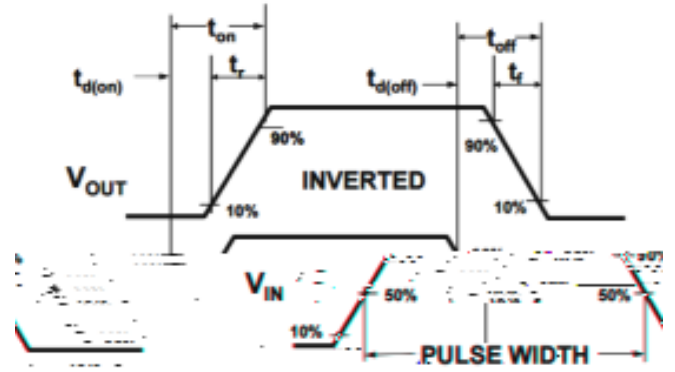
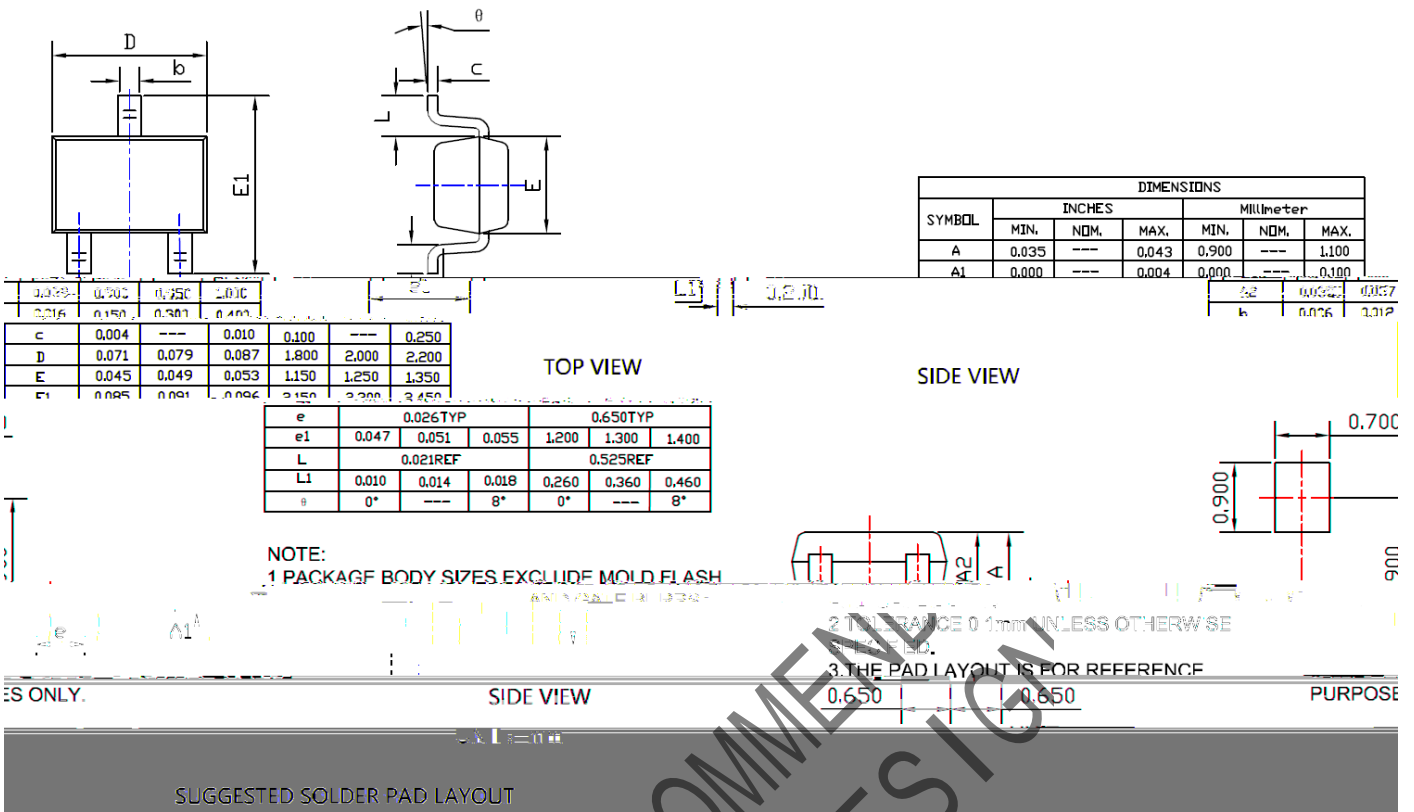


Figure8. Switching wave

NOT RECOMMEND  
FOR NEW DESIGN



SOT-323 Package Information





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