

**Features**

- Split Gate Trench MOSFET Technology
- Low Gate Charge
- Halogen Free
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

**Maximum Ratings**

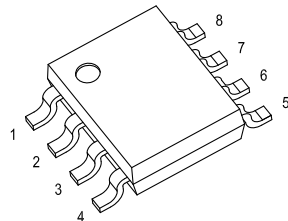
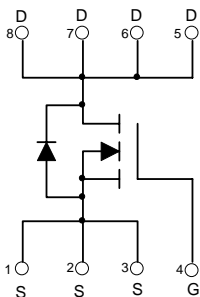
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 62.5°C/W Junction to Ambient <sup>(1)</sup>

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V <sub>DS</sub>	100	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Continuous Drain Current	I <sub>D</sub>	15	A
Pulsed Drain Current <sup>(2)</sup>	I <sub>DM</sub>	36	A
Total Power Dissipation	P <sub>D</sub>	2	W
Single Pulsed Avalanche Energy <sup>(3)</sup>	E <sub>AS</sub>	45	mJ

**Note:**

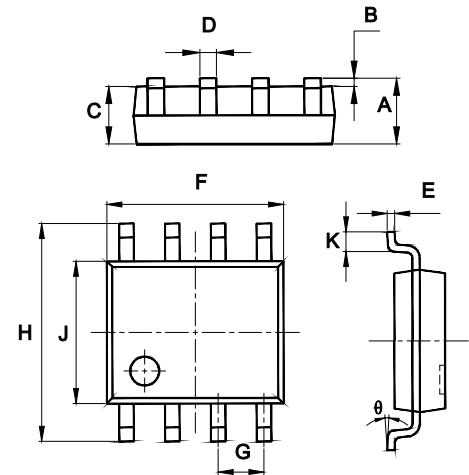
1. Surface Mounted on 1 in<sup>2</sup> pad area, t ≤ 10 sec.
2. Pulse Test: Pulse Width ≤ 10µs, Duty Cycle ≤ 1%.
3. T<sub>J</sub> = 25°C, L = 0.1mH, V<sub>DD</sub> = 50V.

**Internal Structure:**



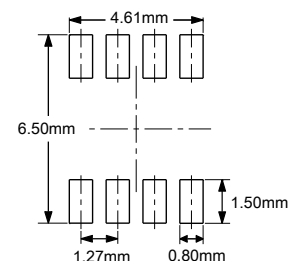
**N-CHANNEL  
MOSFET**

**SOP-8**



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.053	0.069	1.35	1.75	
B	0.004	0.010	0.10	0.25	
C	0.053	0.061	1.35	1.55	
D	0.013	0.020	0.33	0.51	
E	0.007	0.010	0.17	0.25	
F	0.185	0.200	4.70	5.10	
G	0.050	BSC	1.270	BSC	
H	0.228	0.244	5.80	6.20	
J	0.150	0.157	3.80	4.00	
K	0.016	0.050	0.40	1.27	
θ	0°	8°	0°	8°	

**Suggested Solder Pad Layout**



**Electrical Characteristics @ 25°C (Unless Otherwise Specified)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	100			V
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=80V, V_{GS}=0V$			1	$\mu A$
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1		3	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=8A$		9.6	11.5	m $\Omega$
		$V_{GS}=4.5V, I_D=5A$		12.6	16.4	m $\Omega$
<b>Diode Characteristics</b>						
Continuous Body Diode Current	$I_S$				15	A
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=8A$			1.3	V
Reverse Recovery Time	$t_{rr}$	$I_S=8A, di/dt=100A/\mu s$		53		ns
Reverse Recovery Charge	$Q_{rr}$			64		nC
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=50V, V_{GS}=0V, f=1MHz$		1925		pF
Output Capacitance	$C_{oss}$			341		
Reverse Transfer Capacitance	$C_{rss}$			46		
Total Gate Charge	$Q_g$	$V_{DS}=50V, V_{GS}=10V, I_D=8A$		42		nC
Gate-Source Charge	$Q_{gs}$			7.8		
Gate-Drain Charge	$Q_{gd}$			10		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=50V, V_{GEN}=10V, R_G=4.5\Omega, R_L=6.25\Omega, I_{DS}=8A$		9.3		ns
Turn-On Rise Time	$t_r$			21		
Turn-Off Delay Time	$t_{d(off)}$			33		
Turn-Off Fall Time	$t_f$			25		

**Curve Characteristics**

Fig. 1 - Typical Output Characteristics

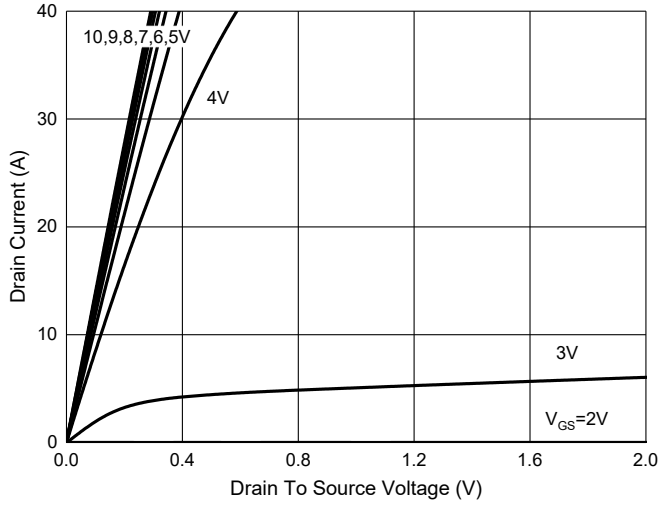


Fig. 2 - I<sub>S</sub>—V<sub>SD</sub>

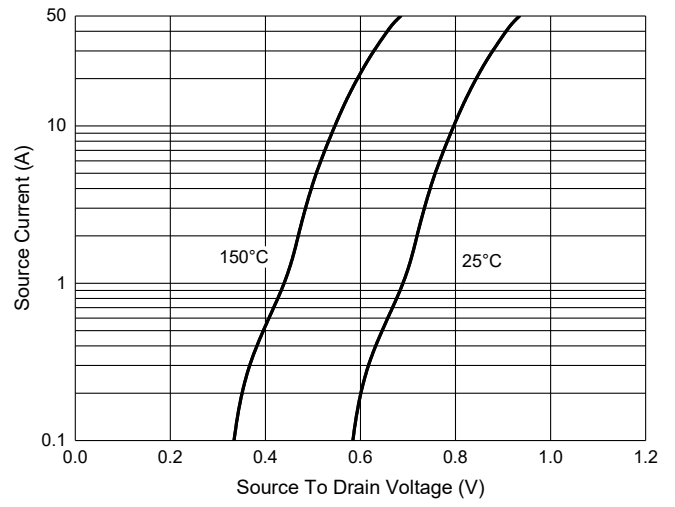


Fig. 3 - R<sub>DS(ON)</sub>—I<sub>D</sub>

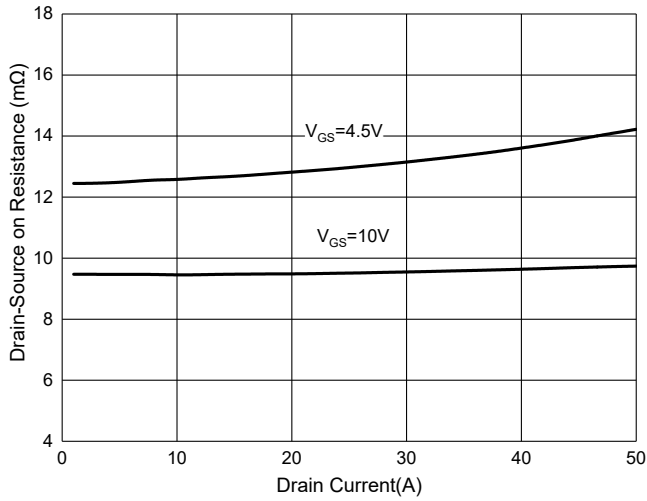


Fig. 4 - Normalized On Resistance Characteristics

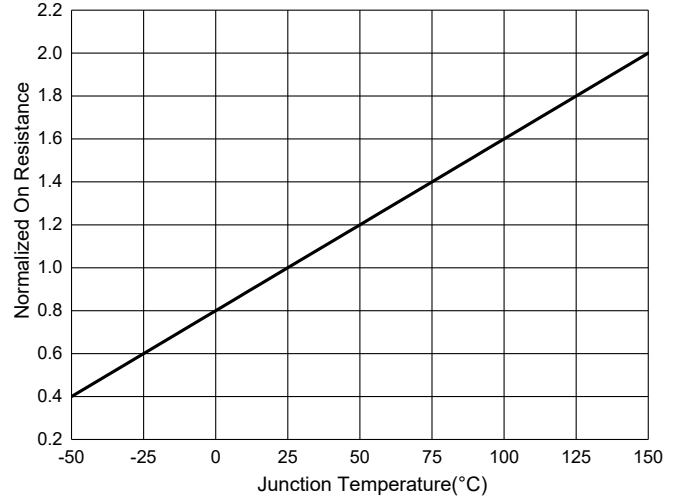


Fig. 5 - Capacitance Characteristics

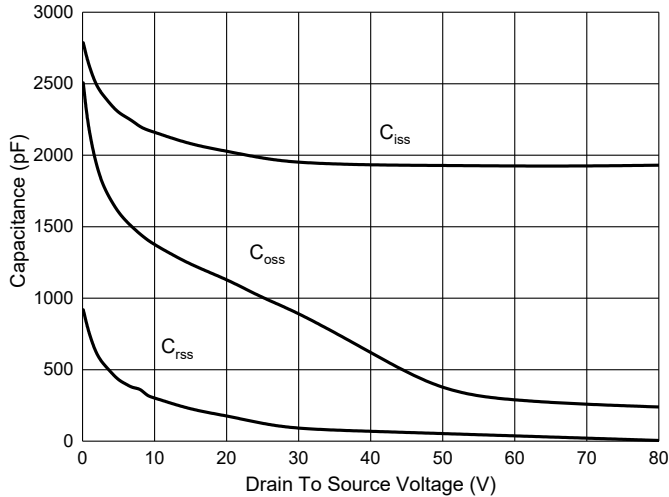
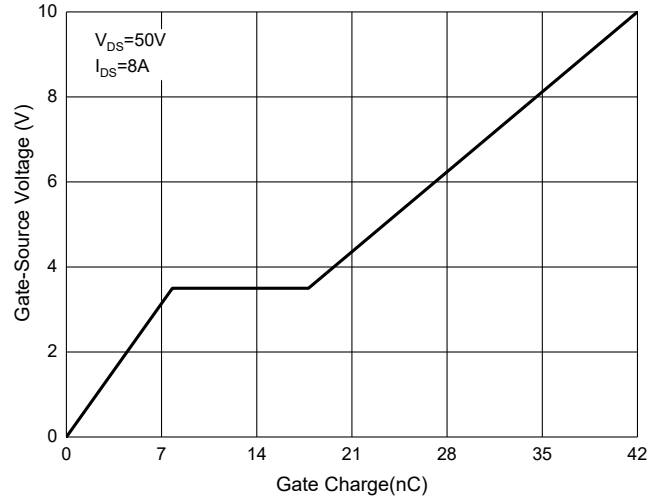
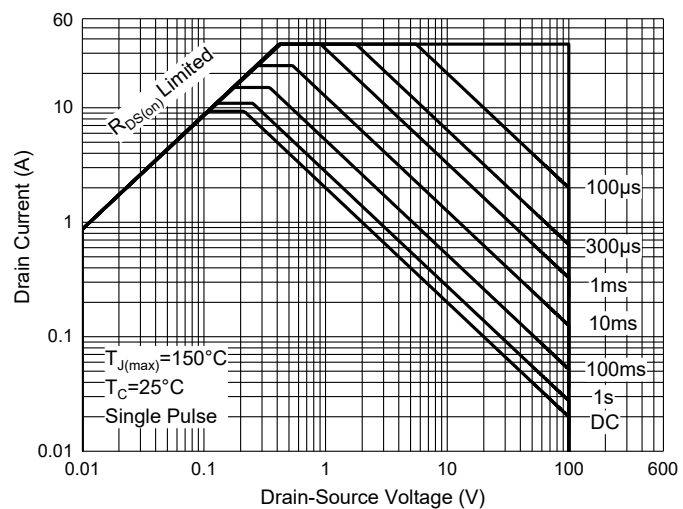


Fig. 6 - Gate Charge



## Curve Characteristics

Fig. 7 - Safe Operation Area



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 4Kpcs/Reel

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