

### Features

- High Density Cell Design for Low  $R_{DS(on)}$
- Trench Power HV MOSFET Technology
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

### Maximum Ratings

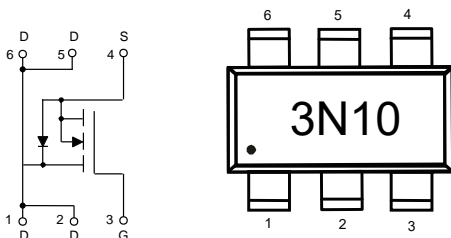
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 83°C/W Junction to Ambient<sup>(Note 1)</sup>
- Thermal Resistance: 36°C/W Junction to Lead

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	$T_A=25^\circ\text{C}$	3 A
		$T_A=70^\circ\text{C}$	2.4 A
Pulsed Drain Current <sup>(Note 2)</sup>	$I_{DM}$	15	A
Total Power Dissipation	$P_D$	1.5	W
Single Pulsed Avalanche Energy	$E_{AS}$	8	mJ

Note 1. Device Mounted on FR-4 PCB, 1inch x 0.85inch x 0.062inch.

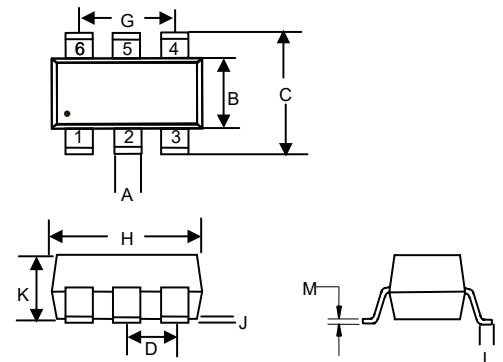
2. Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

### Internal Structure and Marking Code



## N-CHANNEL MOSFET

### SOT23-6L



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.012	0.020	0.30	0.50	
B	0.051	0.070	1.30	1.80	
C	0.087	0.126	2.20	3.20	
D	0.037		0.95		TYP.
G	0.074		1.90		TYP.
H	0.106	0.122	2.70	3.10	
J	0.002	0.006	0.05	0.15	
K	0.030	0.051	0.75	1.30	
L	0.012	0.024	0.30	0.60	
M	0.003	0.008	0.08	0.22	

**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	$I_{DSS}$	$V_{DS}=100V, V_{GS}=0V$			1	$\mu A$
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	1	1.8	2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=3A$		95	120	m $\Omega$
		$V_{GS}=4.5V, I_D=2.4A$		100	140	
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=3A$		0.8	1.2	V
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=50V, V_{GS}=0V, f=1MHz$		810		pF
Output Capacitance	$C_{oss}$			40		
Reverse Transfer Capacitance	$C_{rss}$			32		
<b>Switching Characteristics</b>						
Total Gate Charge	$Q_g$	$V_{DS}=80V, V_{GS}=10V, I_D=2.5A$		19.2		nC
Gate-Source Charge	$Q_{gs}$			3.4		
Gate-Drain Charge	$Q_{gd}$			6.1		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V, V_{DS}=50V, R_L=6.4\Omega$ $R_{GEN}=3\Omega$		15		ns
Turn-On Rise Time	$t_r$			5		
Turn-Off Delay Time	$t_{d(off)}$			30		
Turn-Off Fall Time	$t_f$			5		

## Curve Characteristics

Fig. 1 - Typical Output Characteristics

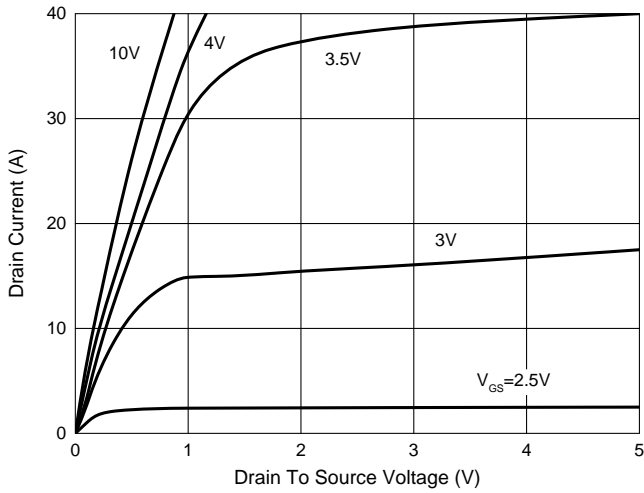


Fig. 2 - Transfer Characteristics

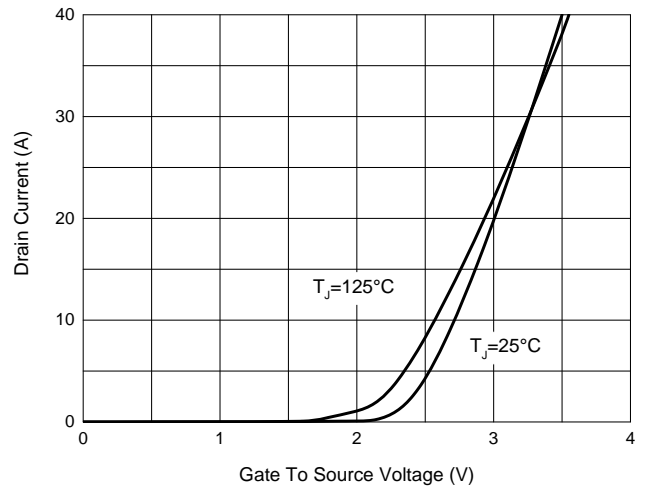


Fig. 3 - Capacitance Characteristics

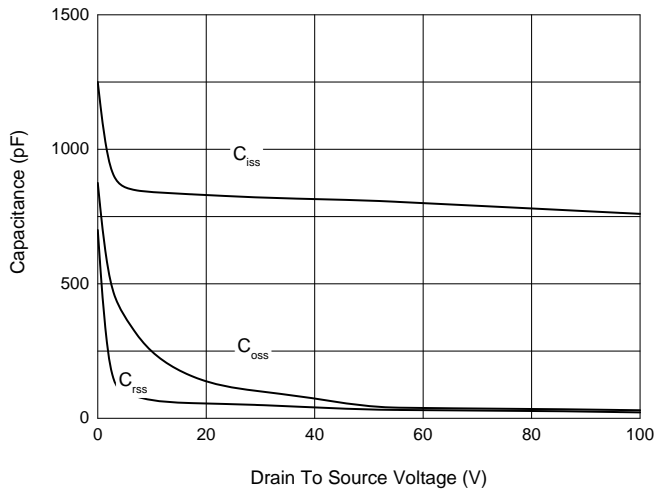


Fig. 4 - Total Gate Charge Characteristics

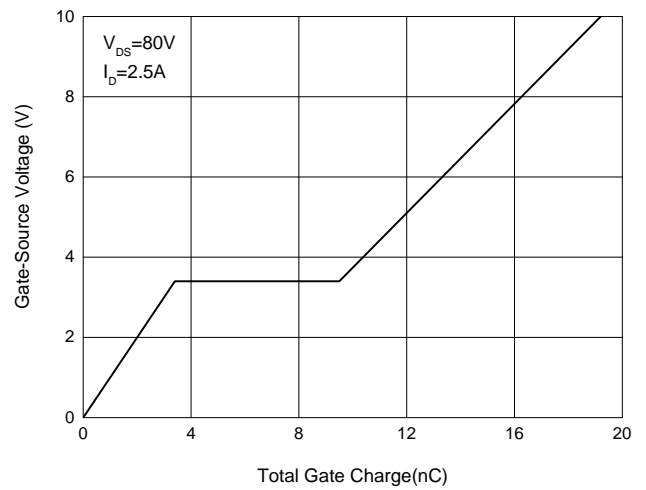


Fig. 5 -  $R_{DS(ON)} - I_D$

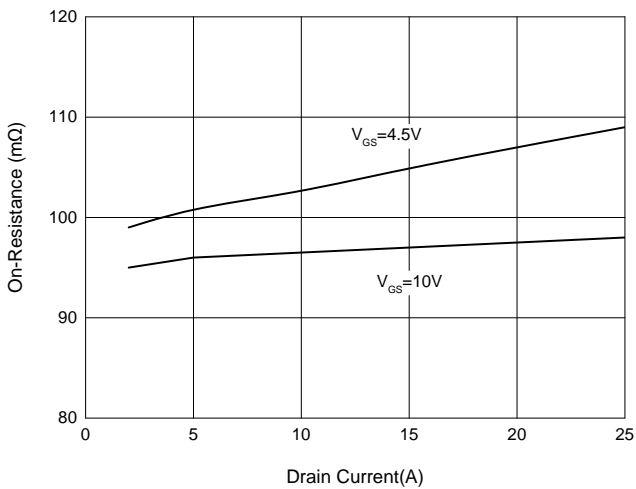
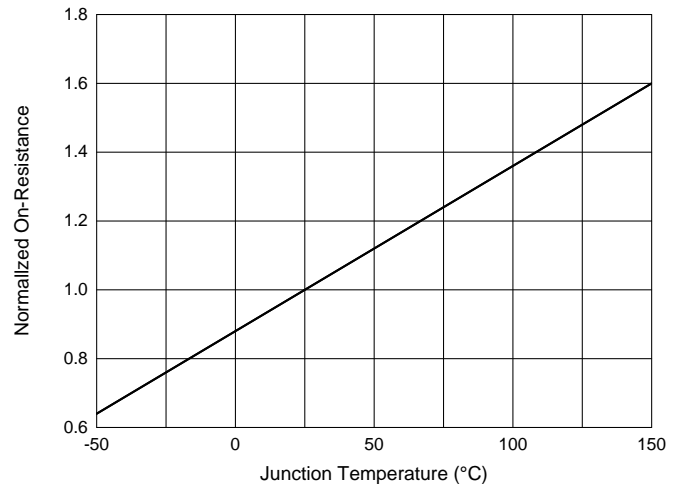


Fig. 6 - Normalized On-Resistance Characteristics



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-TP-HF

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