Features

- Advanced Trench MOSFET Process 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)

N-Channel Power MOSFET

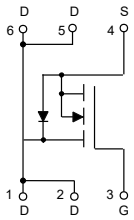
Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 73.5°C/W Junction to Ambient(Note2)

Parameter	Symbol	Rating	Unit
Drain -Source Voltage	V_{DS}	60	V
Gate -Source Volltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	5	A
Pulsed Drain Current(Note1)	I_{DM}	30	A
Power Dissipation	P_D	1.7	W

Noet:1.Pulse Width Limited by Maximum Junction Temperature.
2.Surface Mounted on FR4 Board, t ≤ 10 sec.

Internal Structure



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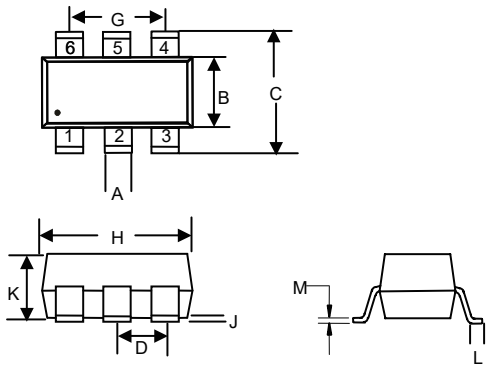
SOT23-6L



DIMENSIONS					
DIM	INCHES		MM		NOTE
	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 (Ta=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	60			V
Gate-Threshold Voltage(Note3)	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1.0		3.0	V
Gate-Body Leakage Current	I_{GSS}	V_{GS} =± 20V, V_{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =60V, V_{GS} =0V			1	μA
Drain-Source On-Resistance(Note3)	$R_{DS(on)}$	V_{GS}=10V, I_D=5A		37	45	mΩ
Forward Transconductance(Note3)	g_{fs}	V_{DS}=5V, I_D=4.5A	11			S
Dynamic Characteristics(Note4)						
Input Capacitance	C_{iss}	V_{DS}=30V,V_{GS}=0V, f=1MHz		500		pF
Output Capacitance	C_{oss}			60		
Reverse Transfer Capacitance	C_{rss}			25		
Switching Characteristics(Note4)						
Total Gate Charge	Q_g	V_{DS}=48V,V_{GS}=10V,I_D=15A		12		nC
Gate-Source Charge	Q_{gs}			4.1		
Gate-Drain Charge	Q_{gd}			4.5		
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=30V,V_{GS}=10V,I_D=2A,R_G =3Ω, R_L=6.7Ω		5.0		ns
Turn-on Rise Time	t_r			2.6		
Turn-off Delay Time	$t_{d(off)}$			16.1		
Turn-off Fall Time	t_f			2.3		
Drain-Source Diode Characteristics						
Diode Forward Voltage(Note3)	V_{SD}	V_{GS}=0V, I_s=20A			1.2	V
Diode Forward Current(Note2)	I_S				20	A
Reverse Recovery Time	t_{rr}	I_F=20A,di/dt=100A/us(Note4)		35		nS
Reverse Recovery Charge	Q_{rr}			53		μC
Forward Turn-On Time	t_{on}	Intrinsic turn-on time is negligible (turn-on is dominated by LS+LD)				

Note: 3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4.Guaranteed by design, not subject to production.

Curve Characteristics

Fig. 1 - $R_{DS(ON)}$—I_D

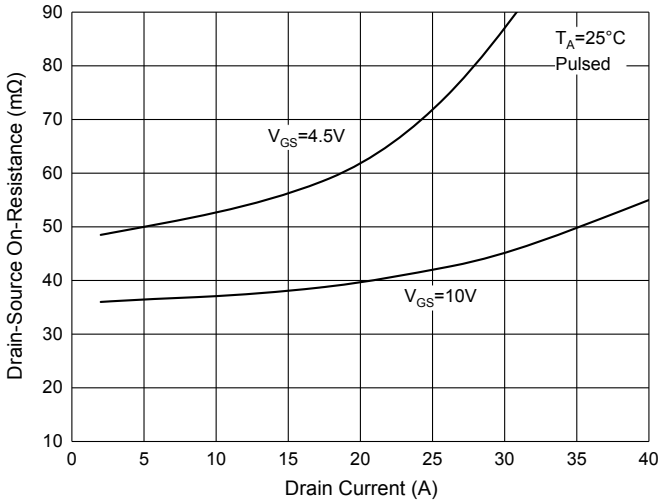


Fig. 2 - Gate Charge

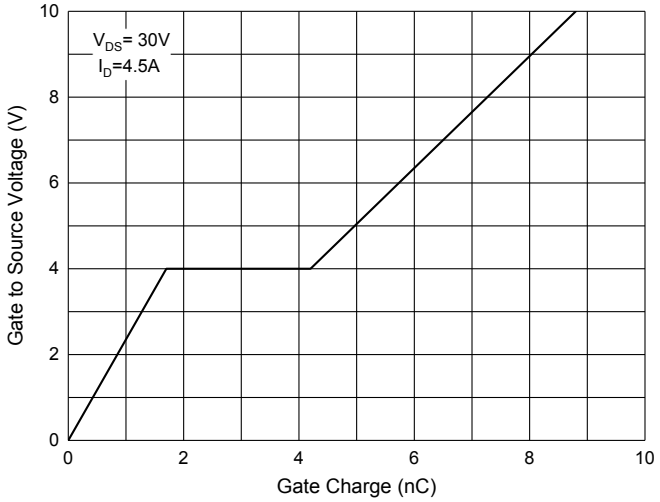


Fig. 3 - Capacitance Characteristics

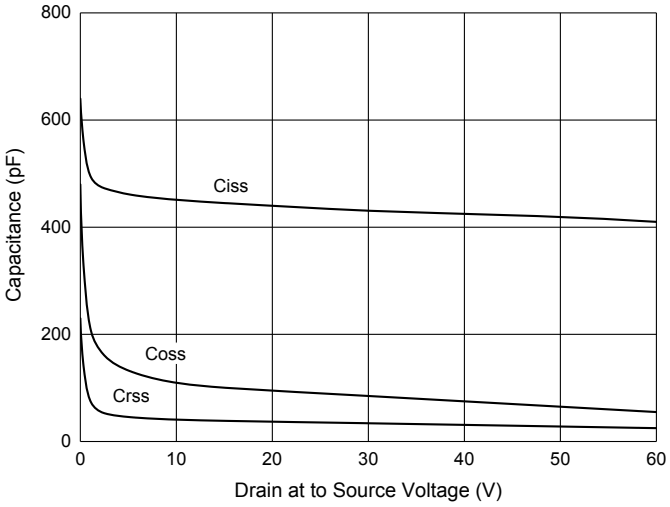
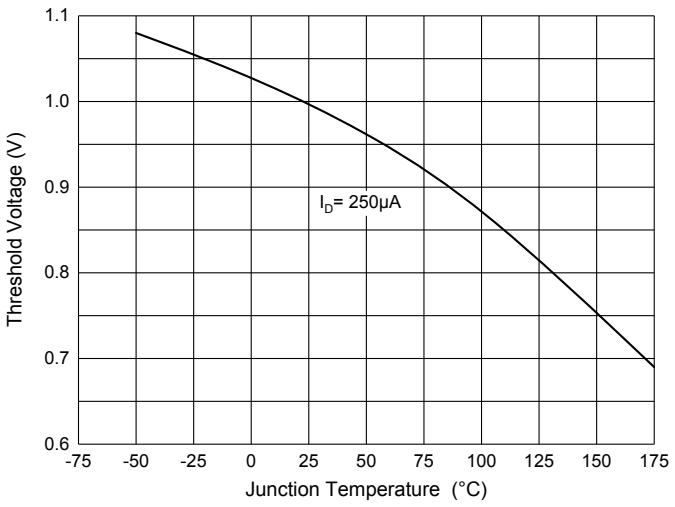


Fig. 4 - Threshold Voltage



Ordering Information

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

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