

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)

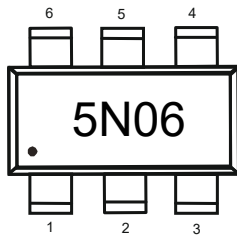
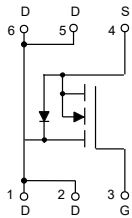
Maximum Ratings

- 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 Voltage	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

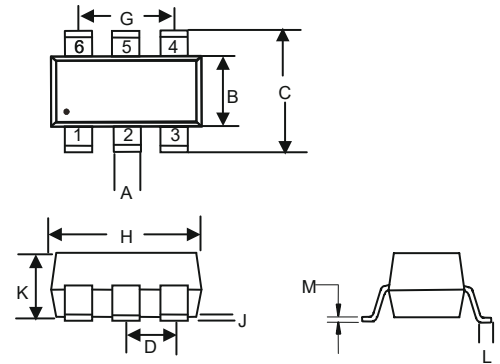
Noet:1.Pulse Width Limited by Maximum Junction Temperature.
2.Surface Mounted on FR4 Board, t ≤ 10 sec.

Internal Structure and Marking Code



**N-Channel
Power 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 (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	60			V
Gate-Threshold Voltage ^(Note3)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0		3.0	V
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 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	m Ω
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	$t_{d(on)}$	$V_{DD}=30V, V_{GS}=10V, I_D=2A, R_G=3\Omega, R_L=6.7\Omega$		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	
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 $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

4. Guaranteed by design, not subject to production.

Curve Characteristics

Fig. 1 - $R_{DS(ON)} - I_D$

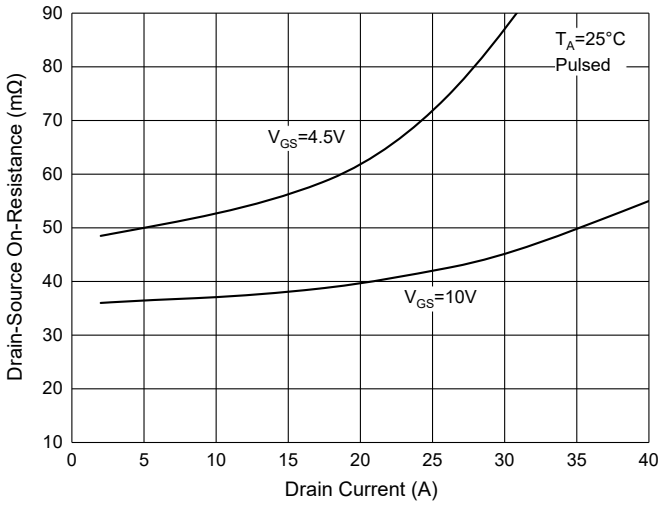


Fig. 2 - Gate Charge

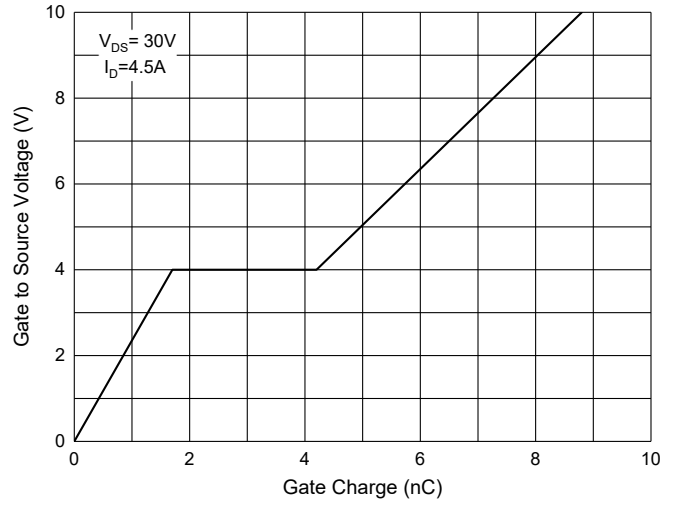


Fig. 3 - Capacitance Characteristics

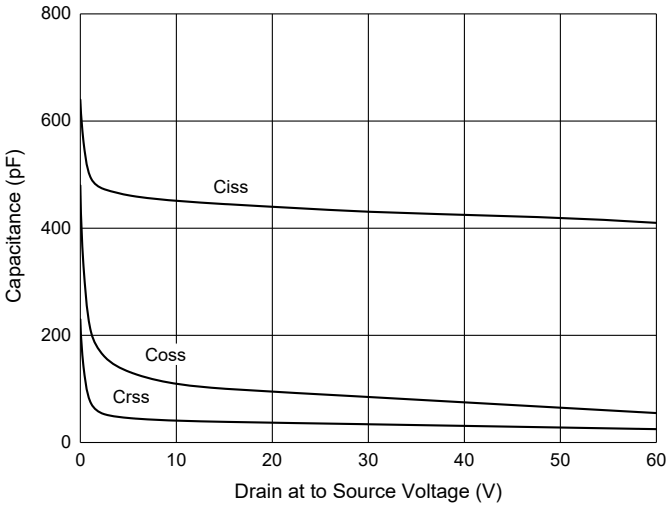
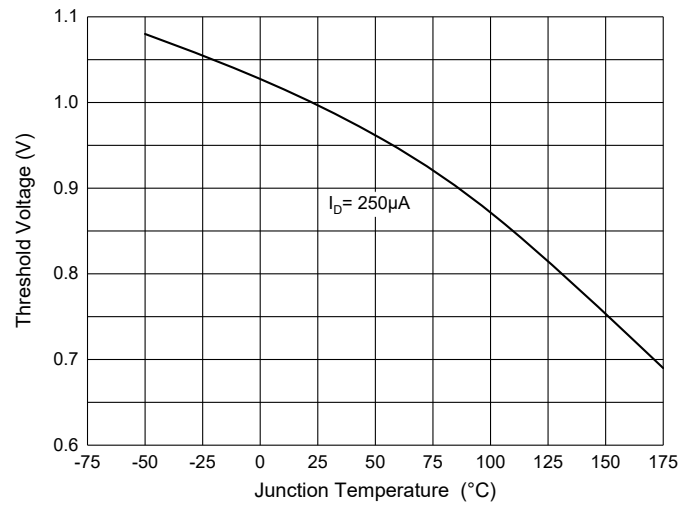


Fig. 4 - Threshold Voltage



Ordering Information

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

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

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