

Features

- 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

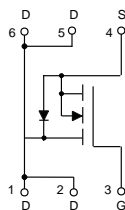
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 78°C/W Junction to Case^(Note1)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	8	A
		5.6	A
Pulsed Drain Current ^(Note2)	I_{DM}	32	A
Total Power Dissipation	P_D	1.6	W

Note 1. Surface Mounted on FR4 Board, $t < 10$ sec.

2. Repetitive Rating : Pulse Width Limited by Maximum Junction Temperature.

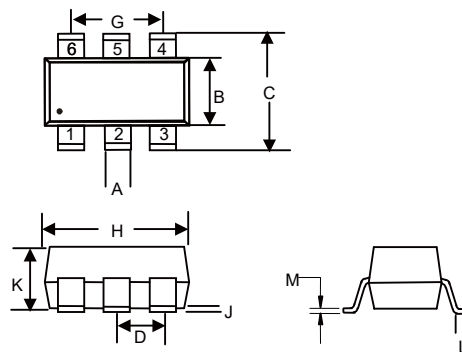
Internal Structure



Marking:8N03

N-CHANNEL MOSFET

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 @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
On Characteristics ^(Note 3)						
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.4	3	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =8A		9	14	mΩ
		V _{GS} =4.5V, I _D =8A		11	16	
Forward Tranconductance	g _{FS}	V _{DS} =5V, I _D =8A		30		S
Dynamic Characteristics ^(Note 4)						
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f =1MHz		900		pF
Output Capacitance	C _{oss}			300		
Reverse Transfer Capacitance	C _{rss}			50		
Switching Characteristics ^(Note 4)						
Turn-On Delay Time	t _{d(on)}	V _{GS} =10V, V _{DD} =25V, I _D =1A, R _{GEN} =6Ω		15		ns
Turn-On Rise Time	t _r			10		
Turn-Off Delay Time	t _{d(off)}			45		
Turn-Off Fall Time	t _f			12		
Total Gate Charge	Q _g	V _{DS} =15V, I _D =8A, V _{GS} =5V		13		nC
Gate-Source Charge	Q _{gs}			3.2		
Gate-Drain Charge	Q _{gd}			2.0		
Drain-Source Diode Characteristics and Maximum Ratings						
Drain-Source Diode Forward Current	I _S				8	A
Diode Forward Voltage ^(Note 3)	V _{SD}	V _{GS} =0V, I _S =8A			1.2	V

Note: 3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

4. Guaranteed by Design, Not Subject to Production Testing.

Curve Characteristics

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

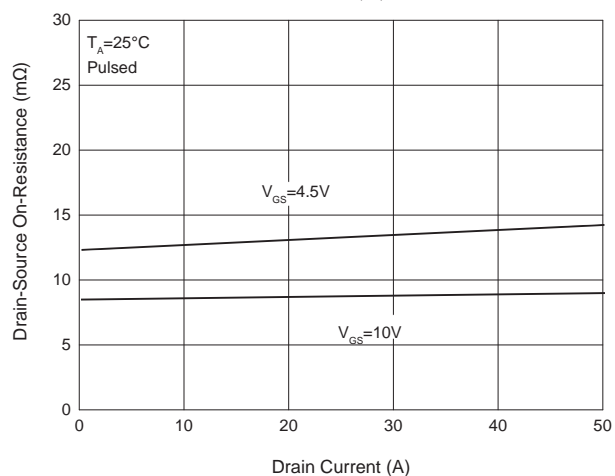


Fig. 2 - Transfer Characteristics

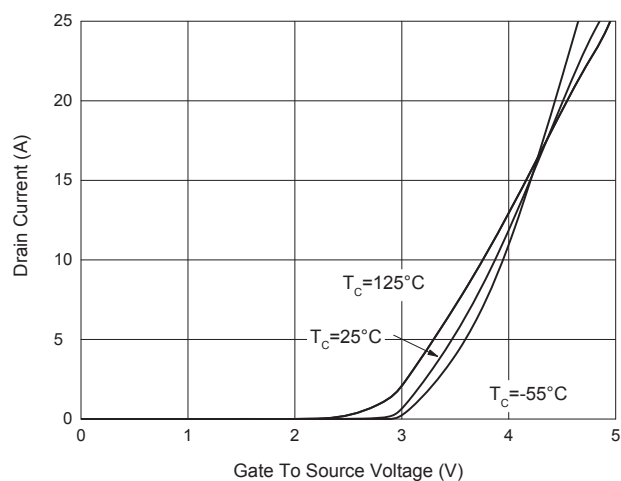


Fig. 3 - Gate Charge Characteristics

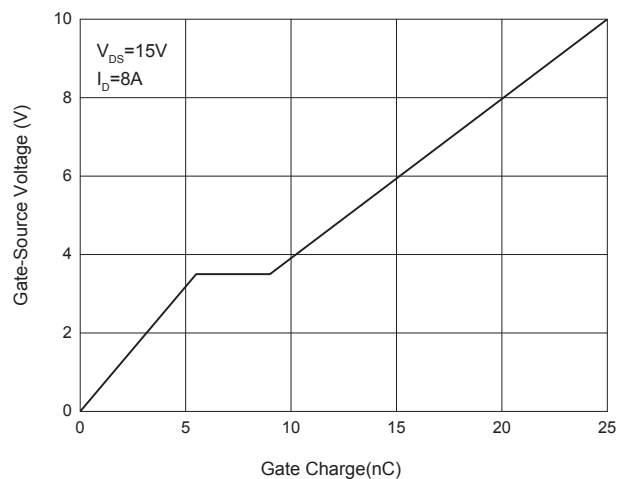
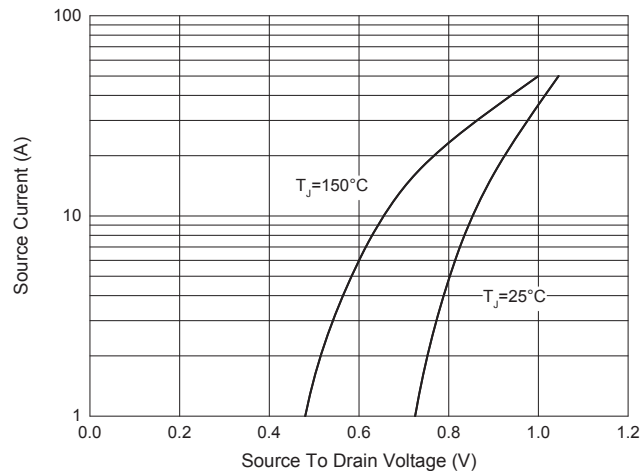


Fig. 4 - $I_S - V_{SD}$



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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