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 Volltage		V_{GS}	±20	V
Continuous Drain Current	T_C=25°C	I_D	8	A
	T_C=100°C		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.

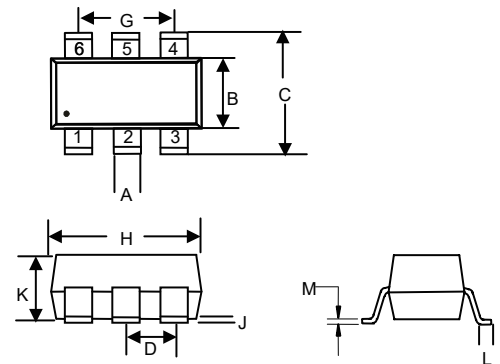2. Repetitive Rating : Pulse Width Limited by Maximum Junction Temperature.

Internal Structure
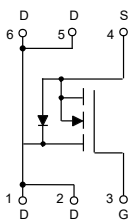
Marking:8N03

N-CHANNEL MOSFET

SOT23-6L

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≤300μs, Duty Cycle ≤ 2%.

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

Curve Characteristics

Fig. 1 - $R_{DS(ON)}$—I_D

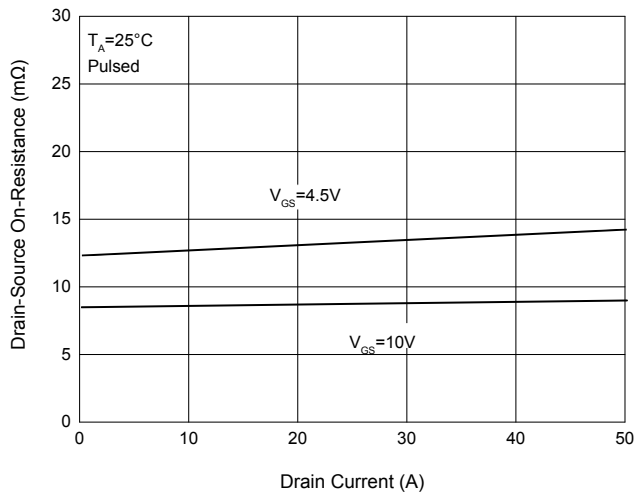Drain-Source On-Resistance (mΩ) vs Drain Current (A)

T_A=25°C
Pulsed

V_{GS}=4.5V

V_{GS}=10V

Fig. 2 - Transfer Characteristics

Drain Current (A) vs Gate To Source Voltage (V)

T_C=125°C

T_C=25°C

T_C=-55°C
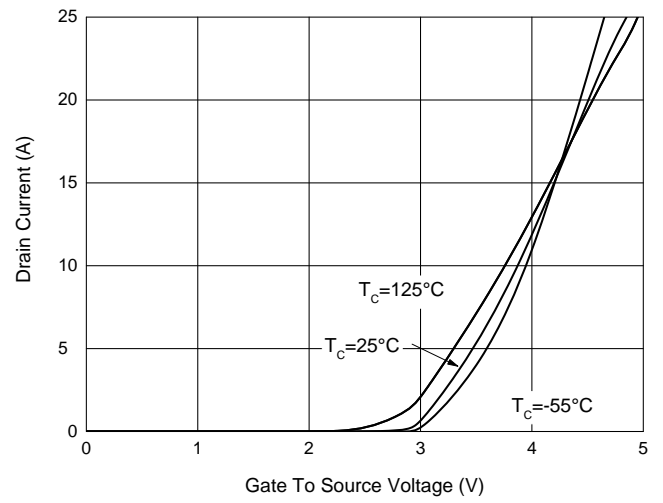
Fig. 3 - Gate Charge Characteristics

Gate-Source Voltage (V) vs Gate Charge(nC)

V_{DS}=15V
I_D=8A

Fig. 4 - I_S—V_{SD}
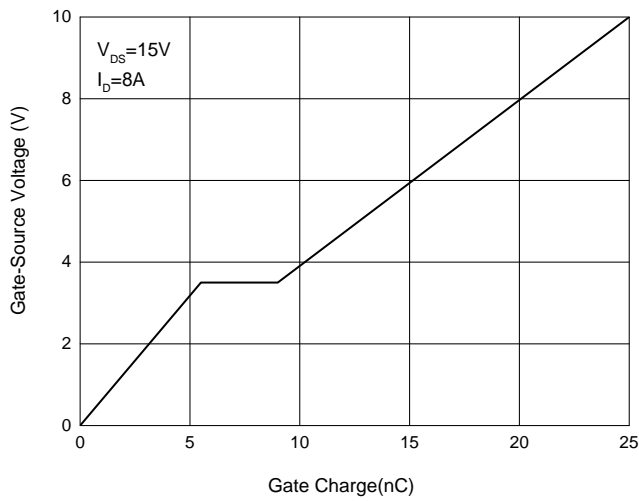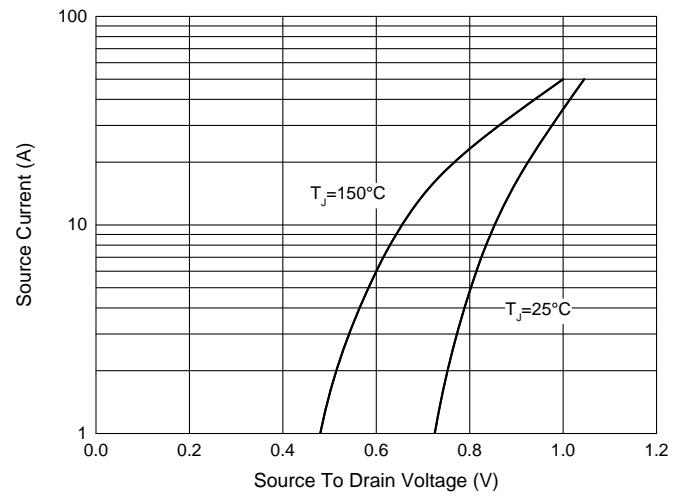
Source Current (A) vs Source To Drain Voltage (V)

T_J=150°C

T_J=25°C

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