

Features

- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

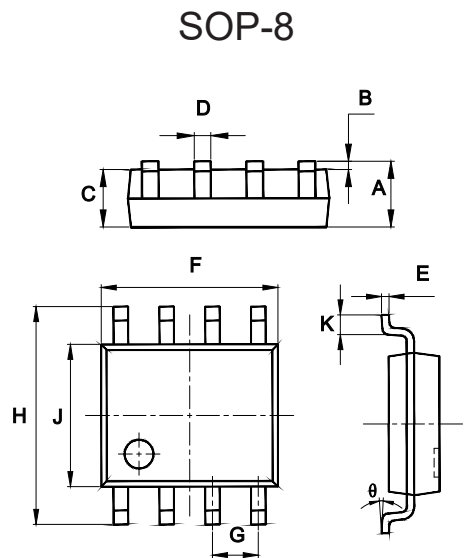
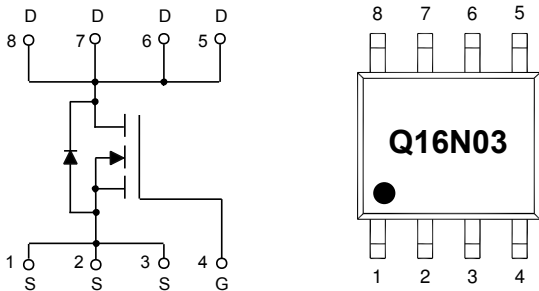
Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 50°C/W Junction to Case (Note 3)

Parameter	Symbol	Rating	Unit
Drain -Source Voltage	V_{DS}	30	V
Gate -Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	16	A
Drain Current-Continuous($T_C=100^\circ\text{C}$)	I_D	6	A
Pulsed Drain Current (Note 2)	I_{DM}	50	A
Maximum Power Dissipation	P_D	2.5	W

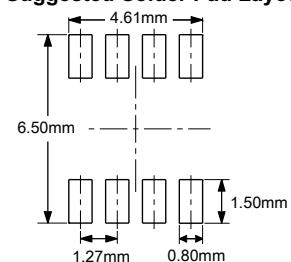
N-Channel Enhancement Mode Field Effect Transistor

Internal Structure and Marking Code



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.053	0.069	1.35	1.75	
B	0.004	0.010	0.10	0.25	
C	0.053	0.061	1.35	1.55	
D	0.013	0.020	0.33	0.51	
E	0.007	0.010	0.17	0.25	
F	0.185	0.200	4.70	5.10	
G	0.050		1.270		TYP.
H	0.228	0.244	5.80	6.20	
J	0.150	0.157	3.80	4.00	
K	0.016	0.050	0.40	1.27	
θ	0°	8°	0°	8°	

Suggested Solder Pad Layout



ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	30	33		V
Gate-Threshold Voltage ^(Note 4)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.6	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}	$V_{DS}=30V, V_{GS}=0V$			1	μA
Drain-Source On-Resistance ^(Note 4)	$R_{DS(on)}$	$V_{GS}=10V, I_D=10A$		8.0	12	m Ω
		$V_{GS}=4.5V, I_D=5.0A$		11	16	
Forward Transconductance	g_{FS}	$V_{DS}=5V, I_D=10A$	15			S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		1550		pF
Output Capacitance	C_{oss}			300		
Reverse Transfer Capacitance	C_{rss}			180		
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=25V, V_{GS}=10V, I_D=1A, R_{GEN}=6\Omega$		30		ns
Turn-On Rise Time	t_r			20		
Turn-Off Delay Time	$t_{d(off)}$			100		
Turn-Off Fall Time	t_f			80		
Total Gate Charge	Q_g	$V_{DS}=15V, I_D=10A, V_{GS}=5.0V$		13		nC
Gate-Source Charge	Q_{gs}			5.5		
Gate-Drain Charge	Q_{gd}			3.5		
Source-Drain Diode characteristics						
Drain-Source Diode Forward Current ^(Note 3)	I_S				16	A
Diode Forward voltage ^(Note 4)	V_{SD}	$V_{GS}=0V, I_S=10A$			1.2	V

Notes:

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Repetitive Rating: Pulse width limited by maximum junction temperature.
3. Surface Mounted on FR4 Board, $t \leq 10$ sec.
4. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

Curve Characteristics

Fig. 1 - Output Characteristics

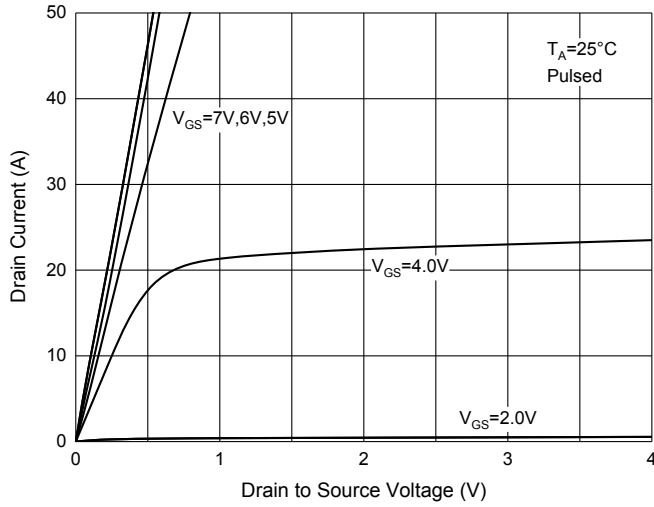


Fig. 2 - Transfer Characteristics

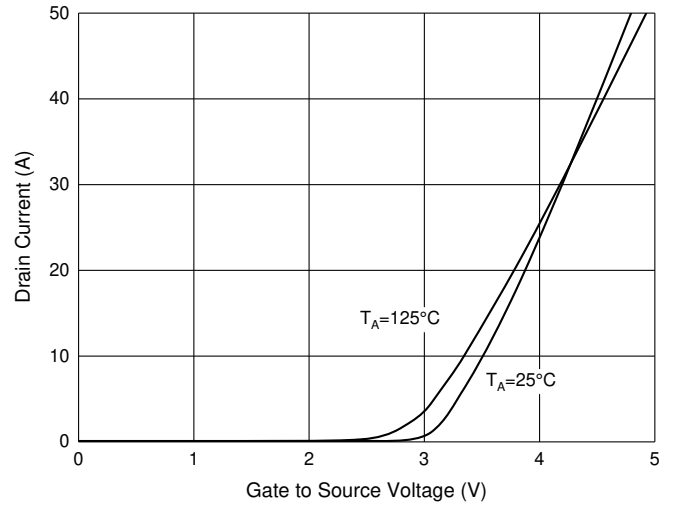


Fig. 3 - $R_{DS(ON)} - I_D$

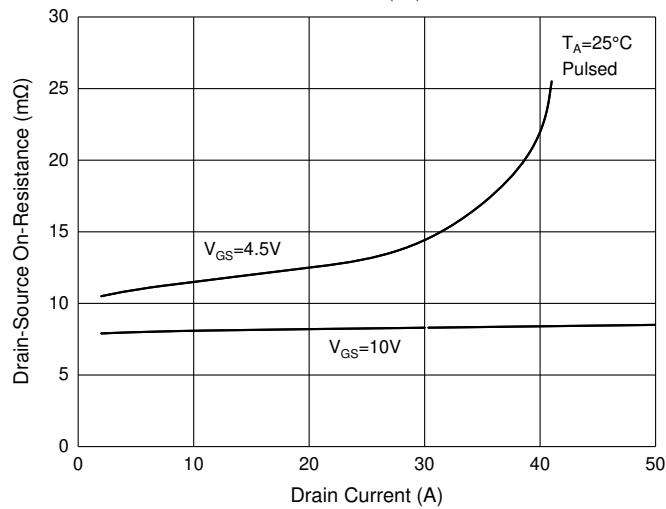


Fig. 4 - $I_S - V_{SD}$

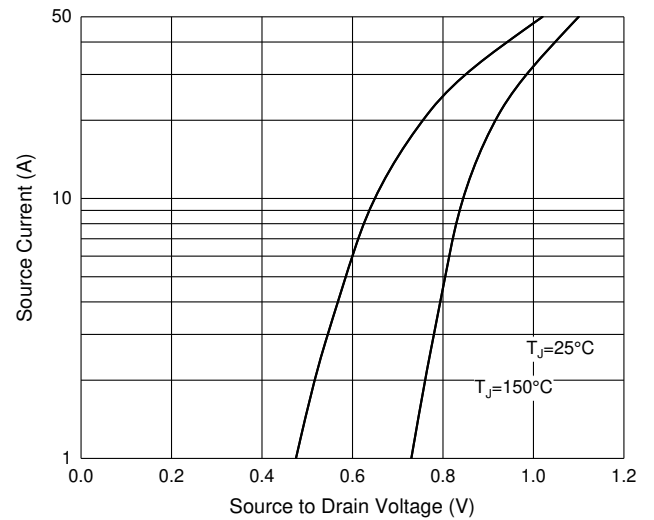


Fig. 5 - Threshold Voltage

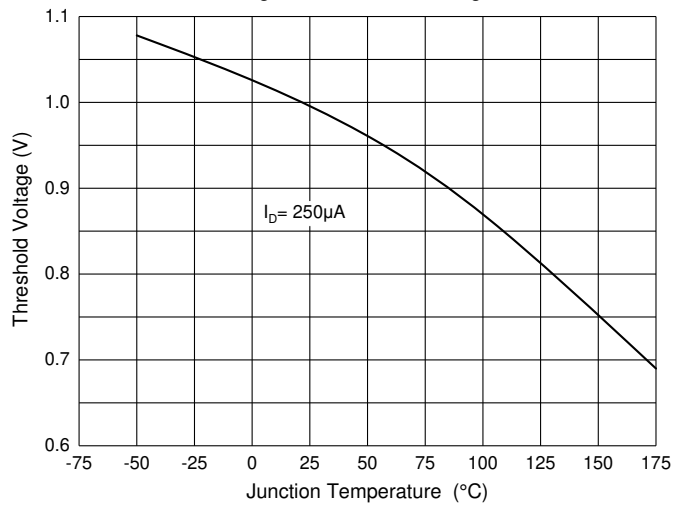
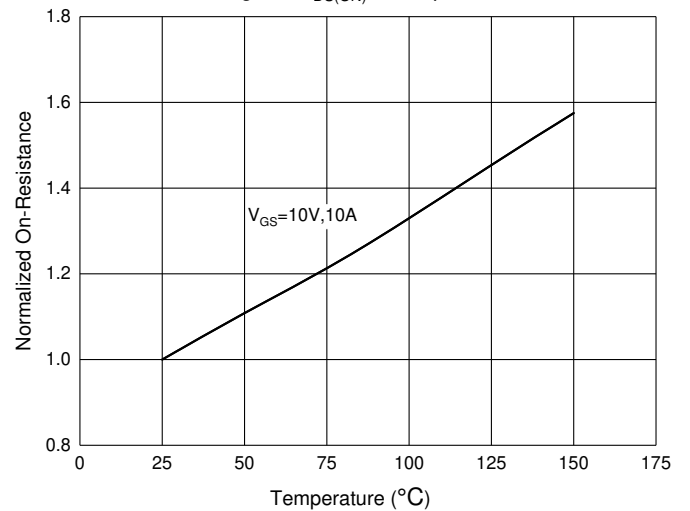


Fig. 6 - $R_{DS(ON)} - \text{Temperature}$



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:4Kpcs/Reel

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