

Features

- Low On-Resistance
- Low Threshold Voltage
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 3
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

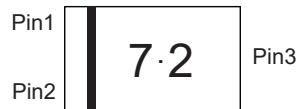
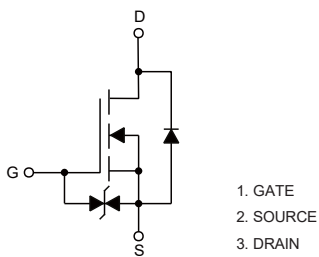
Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Maximum Thermal Resistance: 600°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Drain -source Voltage	V_{DS}	60	V
Gate -Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	$T_A=25^\circ\text{C}$	0.26
		$T_A=70^\circ\text{C}$	0.21
Pulsed Drain Current	I_{DM}	1.3	A
Power Dissipation	P_D	0.2	W

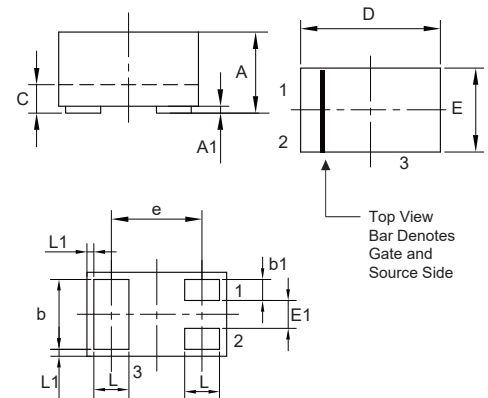
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Internal Structure and Marking Code



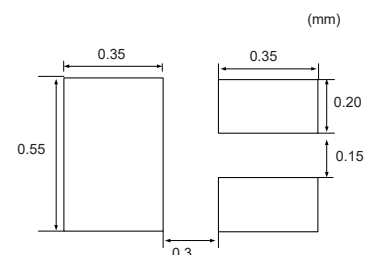
N-Channel MOSFET

DFN1006-3



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.017	0.022	0.42	0.55	
A1	0.000	0.002	0.00	0.05	
b	0.018	0.022	0.45	0.55	
b1	0.004	0.008	0.10	0.20	
c	0.005	0.007	0.12	0.18	
D	0.037	0.041	0.95	1.05	
E	0.022	0.026	0.55	0.65	
E1	0.006	0.010	0.15	0.25	
e	0.026 BSC		0.65BSC		
L	0.008	0.012	0.20	0.30	
L1	0.0002 REF		0.05 REF		

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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	60			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.5	2.5	V
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$			1	μA
Drain-Source On-Resistance ⁽²⁾	$R_{DS(on)}$	$V_{GS}=10V, I_D=300mA$		1.9	2.5	Ω
		$V_{GS}=4.5V, I_D=200mA$		2	3	
Forward Transconductance ⁽²⁾	g_{fs}	$V_{DS}=5V, I_D=300mA$		130		mS
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=300mA$		0.9	1.2	V
Dynamic Characteristics						
Input Capacitance ⁽³⁾	C_{iss}	$V_{DS}=30V, V_{GS}=0V, f=1MHz$		21		pF
Output Capacitance ⁽³⁾	C_{oss}			9		
Reverse Transfer Capacitance ⁽³⁾	C_{rss}			4		
Total Gate Charge	Q_g	$V_{GS}=10V, V_{DS}=30V, I_D=300mA$		1.22		nC
Gate-Source Charge	Q_{gs}			0.5		
Gate-Drain Charge	Q_{gd}			0.18		
Recovered Recovery Charge	Q_{rr}	$V_{GS}=0V, I_S=300mA, V_R=25V$ $di/dt=100A/\mu s$		3.6		
Reverse Recovery Time	t_{rr}			16		
Turn-on Delay Time ⁽³⁾	$t_{d(on)}$	$V_{DS}=50V, I_D=200mA, V_{GS}=10V,$ $R_G=50\Omega$		7		ns
Turn-on Rise Time ⁽³⁾	t_r			19		
Turn-off Delay Time ⁽³⁾	$t_{d(off)}$			20		
Turn-off Rise Time ⁽³⁾	t_f			84		

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

3. These Parameters Have no Way to Verify.

Curve Characteristics

Fig. 1 - Output Characteristics

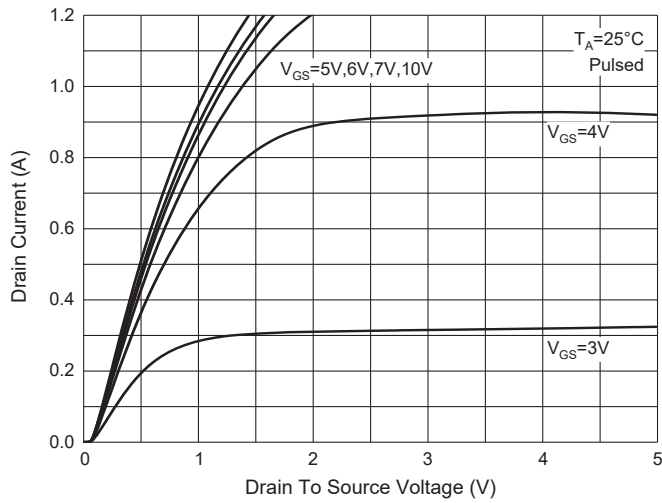


Fig. 2 - Transfer Characteristics

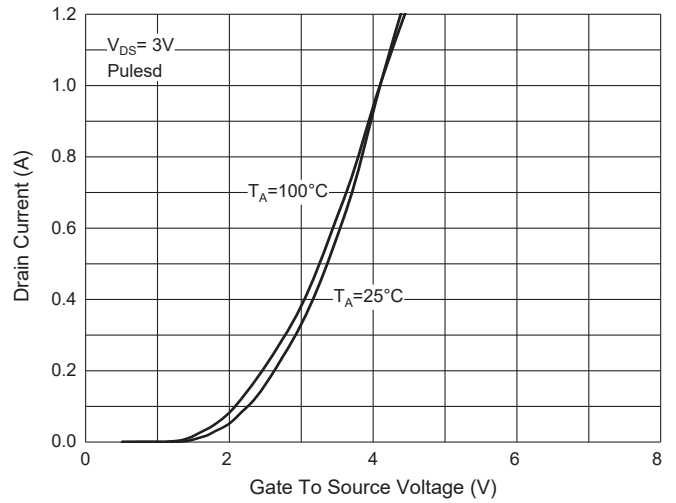


Fig. 3 - $R_{DS(ON)} - I_D$

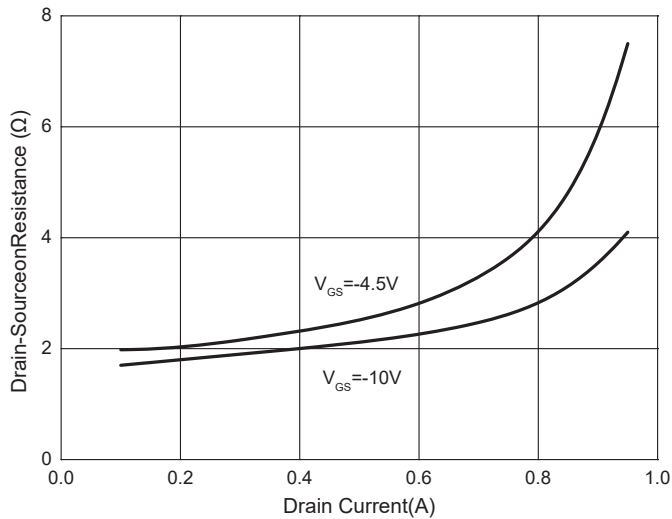


Fig. 4 - $R_{DS(ON)} - V_{GS}$

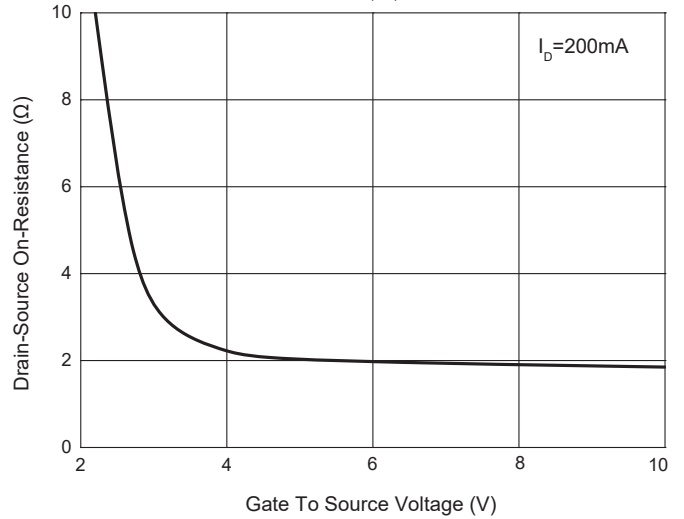


Fig. 5 - $I_S - V_{SD}$

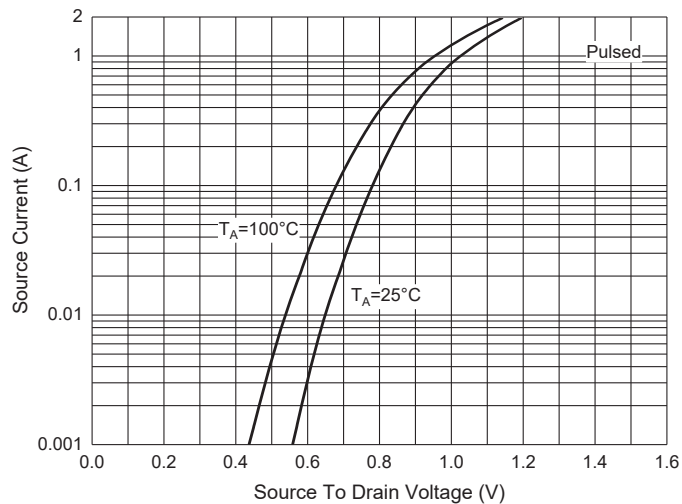
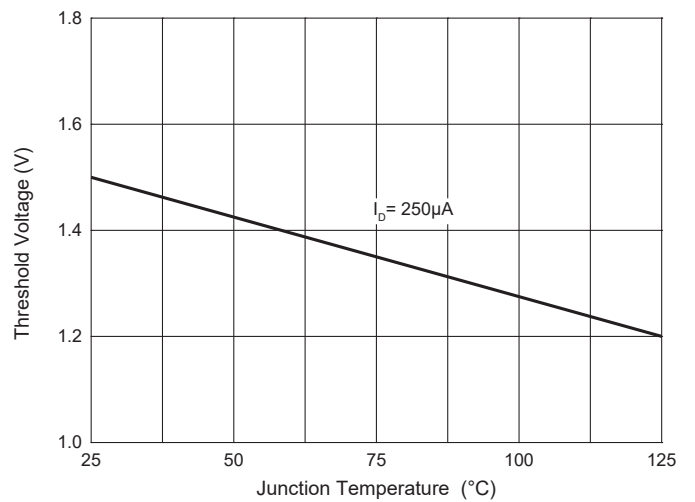
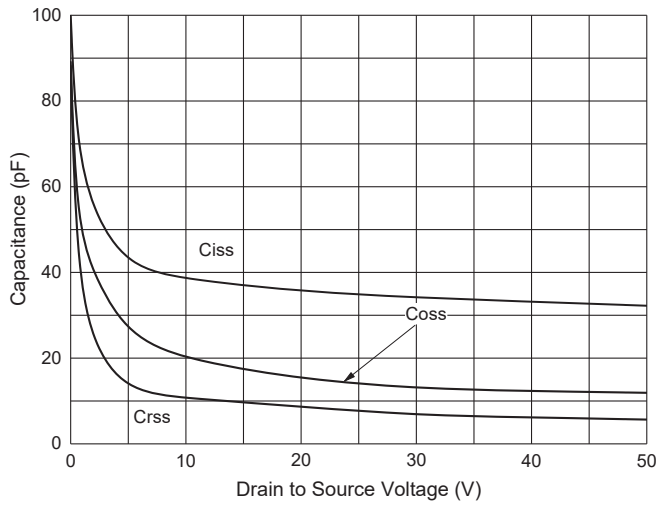


Fig. 6 - Threshold Voltage



Curve Characteristics

Fig. 7 - Capacitance Characteristics



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 10Kpcs/Reel

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