

## 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)

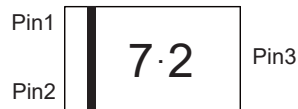
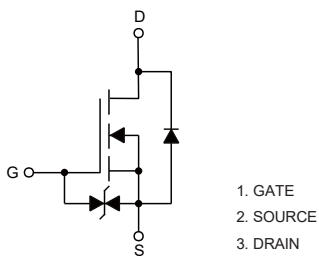
## Maximum Ratings

- 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

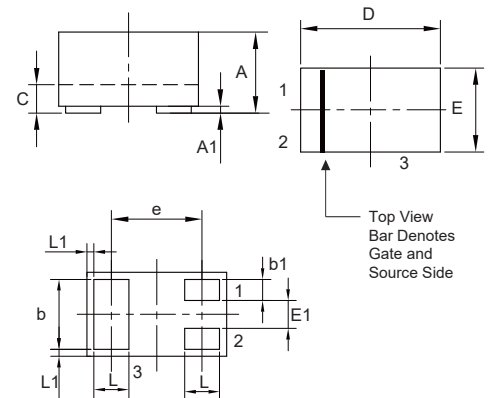
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

## Internal Structure and Marking Code



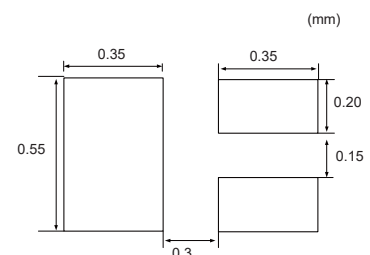
## N-Channel MOSFET

### 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
<b>Static Characteristics</b>						
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	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 10$	$\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$			1	$\mu A$
Drain-Source On-Resistance <sup>(2)</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=300mA$		1.9	2.5	$\Omega$
		$V_{GS}=4.5V, I_D=200mA$		2	3	
Forward Transconductance <sup>(2)</sup>	$g_{fs}$	$V_{DS}=5V, I_D=300mA$		130		mS
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=300mA$		0.9	1.2	V
<b>Dynamic Characteristics</b>						
Input Capacitance <sup>(3)</sup>	$C_{iss}$	$V_{DS}=30V, V_{GS}=0V, f=1MHz$		21		pF
Output Capacitance <sup>(3)</sup>	$C_{oss}$			9		
Reverse Transfer Capacitance <sup>(3)</sup>	$C_{rss}$			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 <sup>(3)</sup>	$t_{d(on)}$	$V_{DS}=50V, I_D=200mA, V_{GS}=10V,$ $R_G=50\Omega$		7		ns
Turn-on Rise Time <sup>(3)</sup>	$t_r$			19		
Turn-off Delay Time <sup>(3)</sup>	$t_{d(off)}$			20		
Turn-off Rise Time <sup>(3)</sup>	$t_f$			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

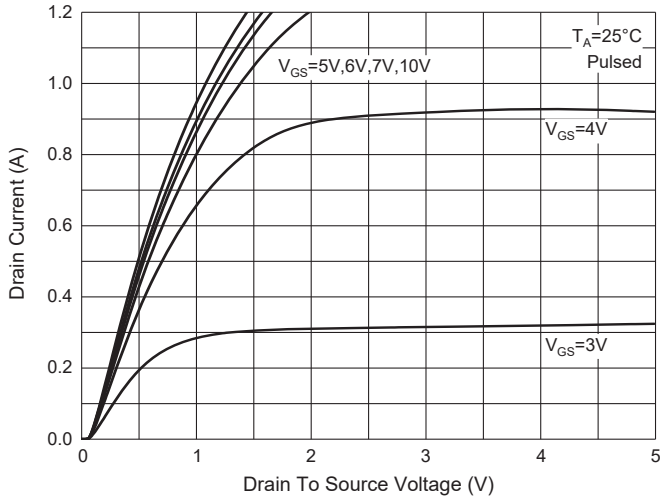


Fig. 2 - Transfer Characteristics

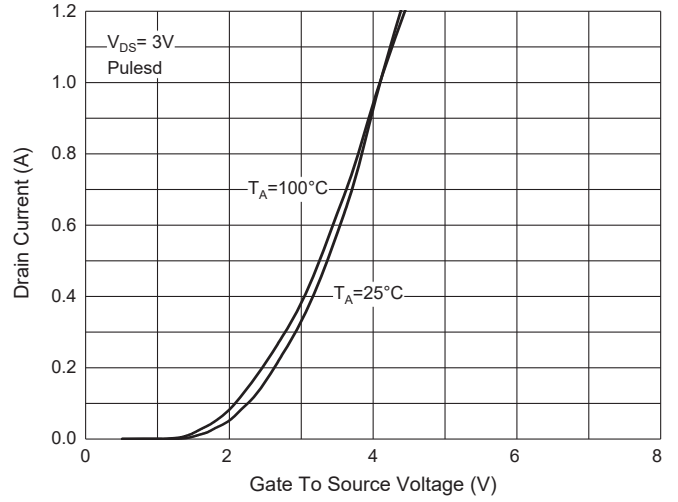


Fig. 3 -  $R_{DS(ON)} - I_D$

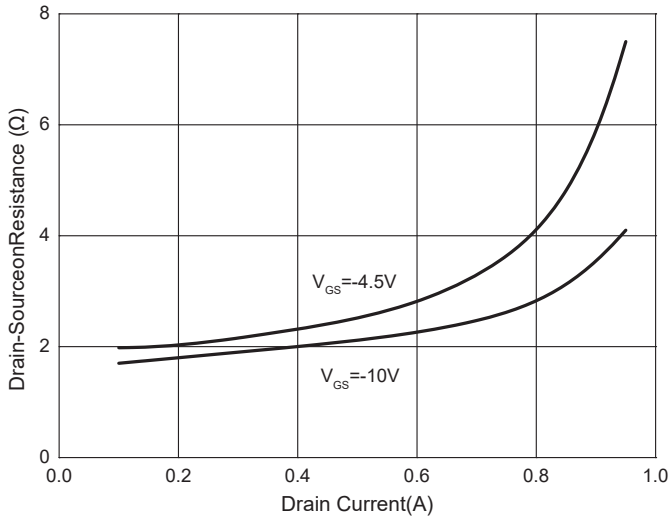


Fig. 4 -  $R_{DS(ON)} - V_{GS}$

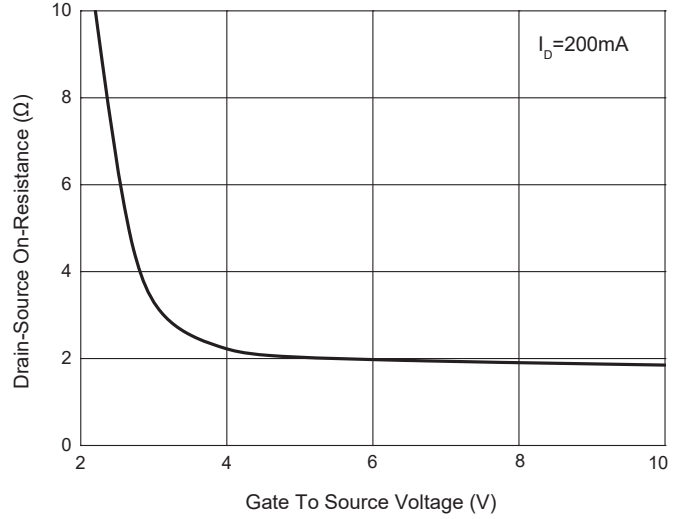


Fig. 5 -  $I_S - V_{SD}$

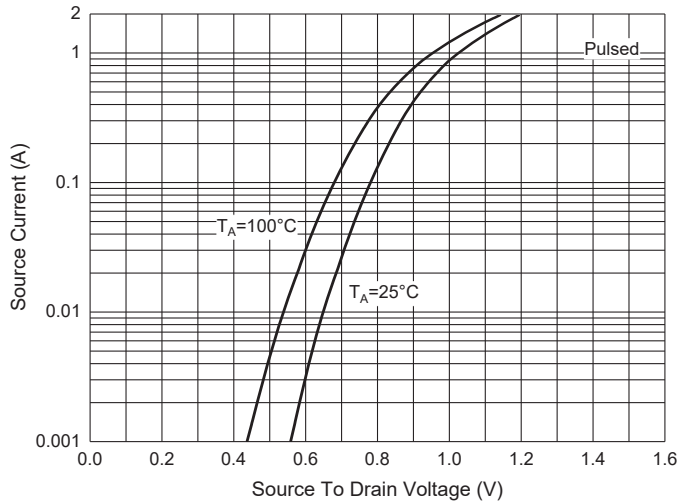
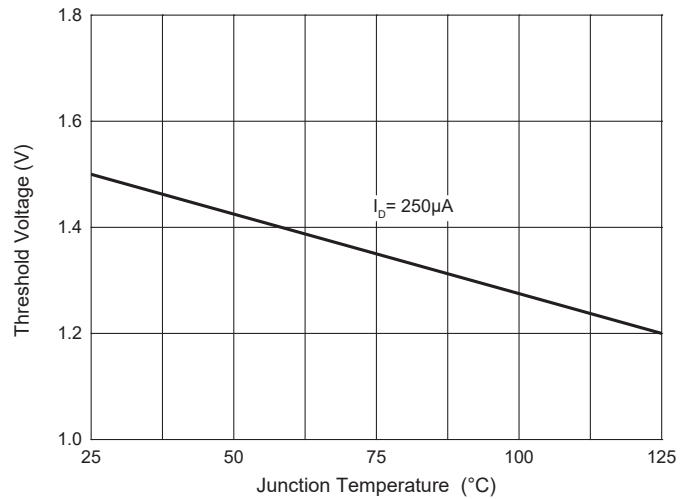
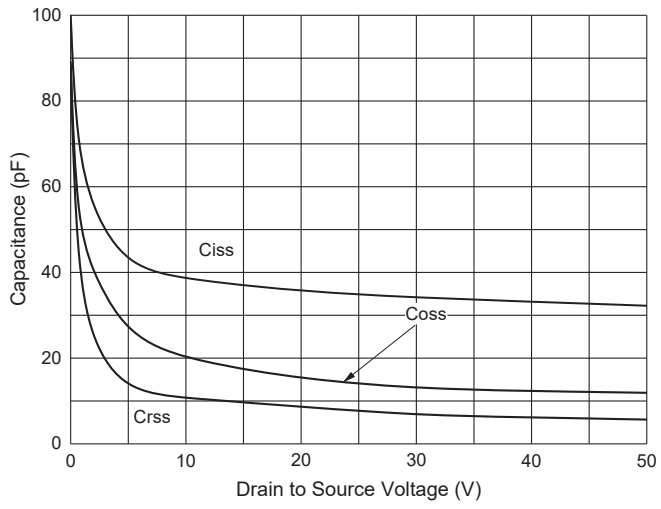


Fig. 6 - Threshold Voltage



## Curve Characteristics

Fig. 7 - Capacitance Characteristics



## Ordering Information

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

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