Features

- Low Threshold
- ESD Protected Gate
- 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)

N-CHANNEL MOSFET

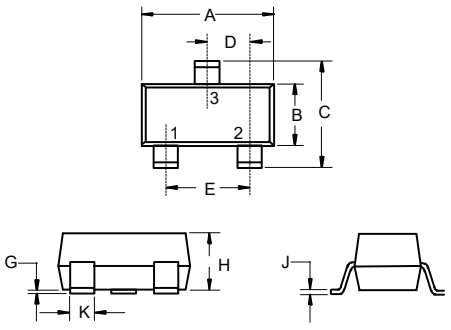
Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 833°C/W Junction to Ambient
- Thermal Resistance: 455°C/W Junction to Case

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Volltage		V_{GS}	±12	V
Continuous Drain Current		I_D	0.5	A
Pulsed Drain Current (Note 2)		I_{DM}	1	A
Total Power Dissipation	T_A=25°C(Note 3)	P_D	150	mW
	T_C=25°C(Note 4)		275	mW

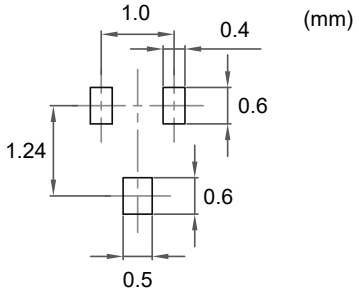
Note: 1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
3. This Test is Performed with no Heat Sink at T_A=25°C.
4.This Test is Performed with Infinite Heat Sink at T_C=25°C.

SOT-523

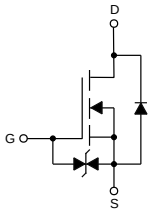


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.059	0.067	1.50	1.70	
B	0.030	0.033	0.75	0.85	
C	0.057	0.069	1.45	1.75	
D	0.020		0.50		TYP.
E	0.035	0.043	0.90	1.10	
G	0.000	0.004	0.00	0.10	
H	0.024	0.031	0.60	0.80	
J	0.004	0.008	0.10	0.20	
K	0.006	0.014	0.15	0.35	

Suggested Solder Pad Layout



Internal Structure



1. GATE
2. SOURCE
3. DRAIN

Marking: C

Electrical Characteristics @ 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=250μA	20			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±4.5V			±1	μA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=16V, V_{GS}=0V			100	nA
Gate-Threshold Voltage(Note 5)	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.45	0.8	1.2	V
Drain-Source On-Resistance(Note 5)	$R_{DS(on)}$	V_{GS}=4.5V, I_D=600mA		250	700	mΩ
		V_{GS}=2.5V, I_D=500mA		330	850	
Forward Tranconductance	g_{FS}	V_{DS}=10V, I_D=400mA		1		S
Dynamic Characteristics(Note 6)						
Input Capacitance	C_{iss}	V_{DS}=16V,V_{GS}=0V,f=1MHz		100		pF
Output Capacitance	C_{oss}			16		
Reverse Transfer Capacitance	C_{rss}			12		
Total Gate Charge	Q_g	V_{DS}=10V,V_{GS}=4.5V,I_D=250mA		750		nC
Gate-Source Charge	Q_{gs}			75		
Gate-Drain Charge	Q_{gd}			225		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=10V, R_L=47Ω, I_D=200mA, V_{GS}=4.5V,R_G=10Ω		5		ns
Turn-On Rise Time	t_r			5		
Turn-Off Delay Time	$t_{d(off)}$			25		
Turn-Off Fall Time	t_f			11		
Drain-Source Body Diode Characteristics						
Body Diode Voltage (Note 5)	V_{SD}	I_S=0.15A, V_{GS}=0V			1.2	V

Note 5. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤0.5%.

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

Curve Characteristics

Fig. 1 - Output Characteristics

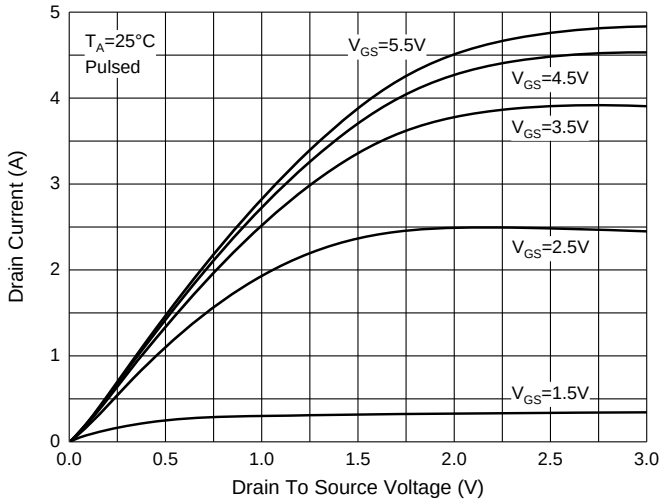


Fig. 2 - Transfer Characteristics

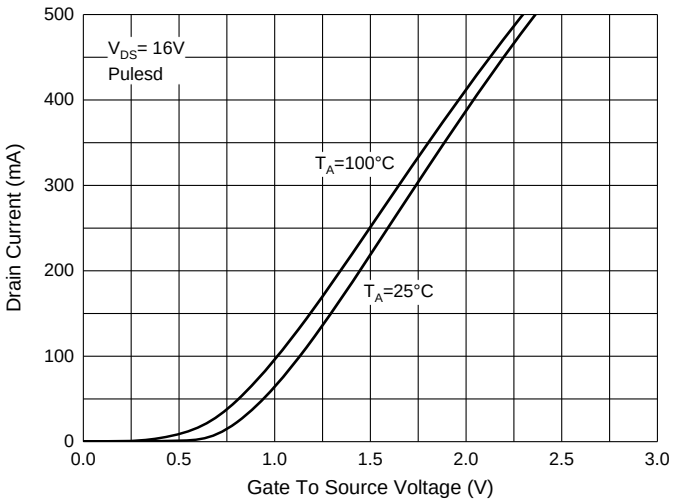


Fig. 3 - $R_{DS(ON)}$—I_D

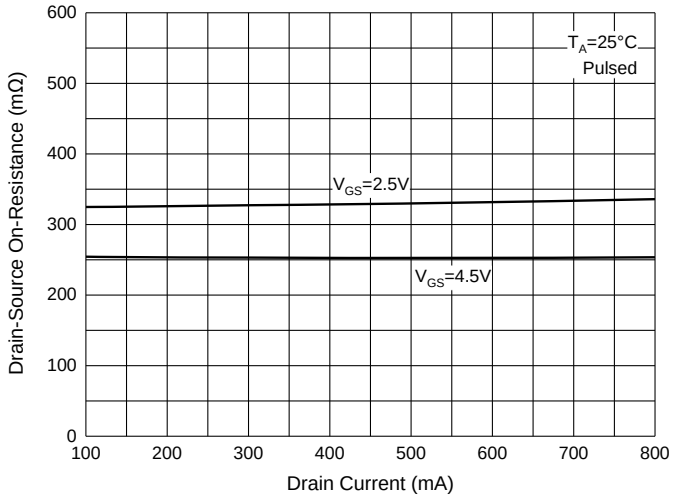


Fig. 4 - $R_{DS(ON)}$—V_{GS}

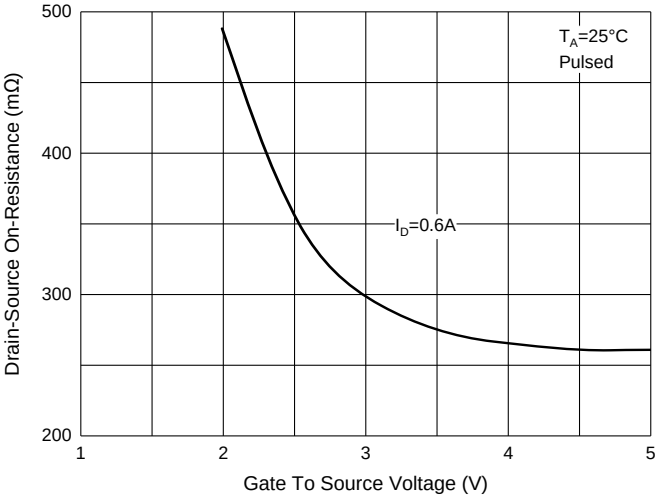


Fig. 5 - I_S—V_{SD}

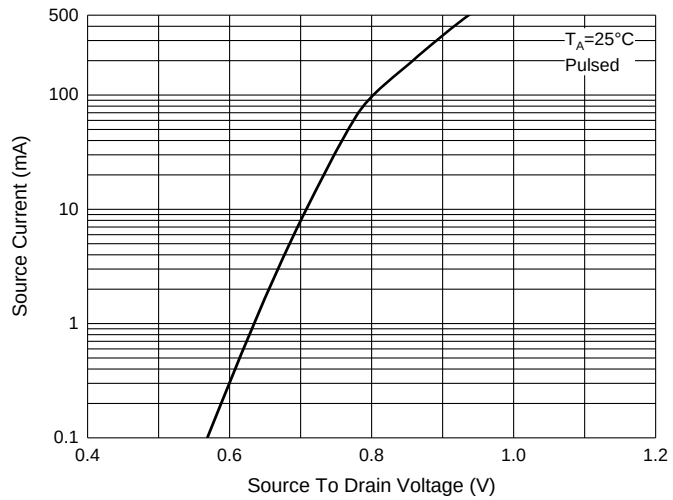
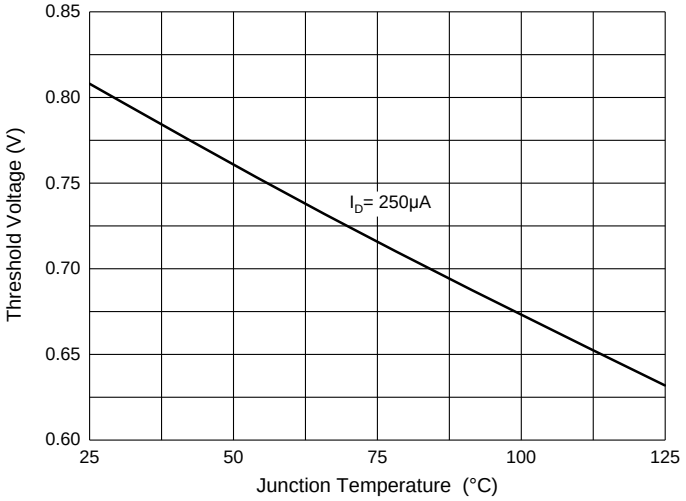


Fig. 6 - Threshold Voltage



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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