

Features

- Low RDS(on) Improving System Efficiency
- ESD Protected Gate
- 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)

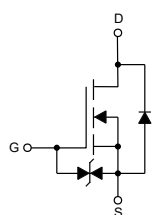
Maximum Ratings

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±6	V
Drain Current-Continuous ^(Note 1)	I_D	915	mA
Power Dissipation	P_D	150	mW

Note 1. Surface Mounted on FR4 Board Using 1 Inch Square Pad Size.

Internal Structure

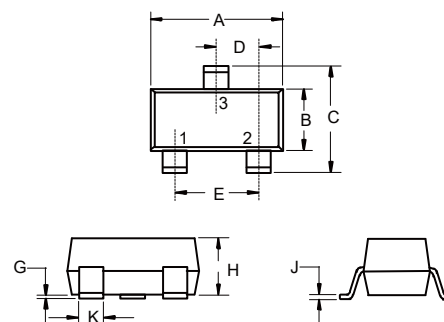


1. GATE
2. SOURCE
3. DRAIN

Marking: X / 34K

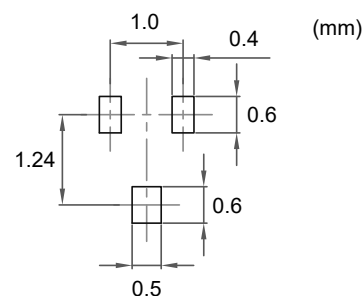
N-Channel MOSFET

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	0.028	0.031	0.70	0.80	
J	0.004	0.008	0.10	0.20	
K	0.006	0.014	0.15	0.35	

Suggested Solder Pad Layout



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 2)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.45		1.1	V
Drain-Source On-Resistance ^(Note 2)	R _{DS(on)}	V _{GS} =4.5V, I _D =600mA			570	mΩ
		V _{GS} =2.5V, I _D =500mA			620	
		V _{GS} =1.8V, I _D =350mA			700	
		V _{GS} =1.5V, I _D =40mA			950	
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =0.2A			1.1	V
Forward Tranconductance ^(Note 2)	g _{FS}	V _{DS} =10V, I _D =400mA	0.5			S
Dynamic Characteristics ^(Note 3)						
Input Capacitance	C _{iss}	V _{DS} =16V,V _{GS} =0V,f=1MHz		110		pF
Output Capacitance	C _{oss}			16		
Reverse Transfer Capacitance	C _{rss}			12		
Total Gate Charge	Q _g	V _{DD} =10V,V _{GS} =4.5V,I _D =200mA		1.82		nC
Gate-Source Charge	Q _{gs}			0.3		
Gate-Drain Charge	Q _{gd}			0.42		
Dynamic Characteristics ^(Note 3,4)						
Turn-On Delay Time	t _{d(on)}	V _{DD} =10V, V _{GS} =4.5V I _D =200mA, R _G =10Ω		3.7		ns
Turn-On Rise Time	t _r			4.4		
Turn-Off Delay Time	t _{d(off)}			25		
Turn-Off Fall Time	t _f			7.6		

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

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

4. Switching Characteristics are Independent of Operating Junction Temperatures.

Curve Characteristics

Fig. 1 - Output Characteristics

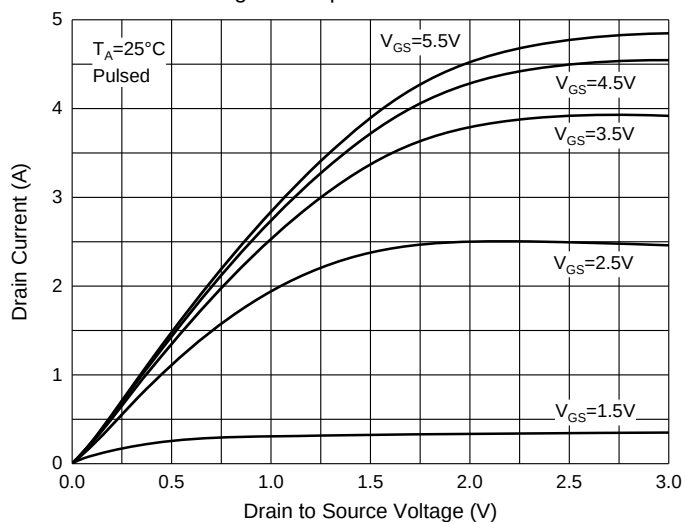


Fig. 2 - Transfer Characteristics

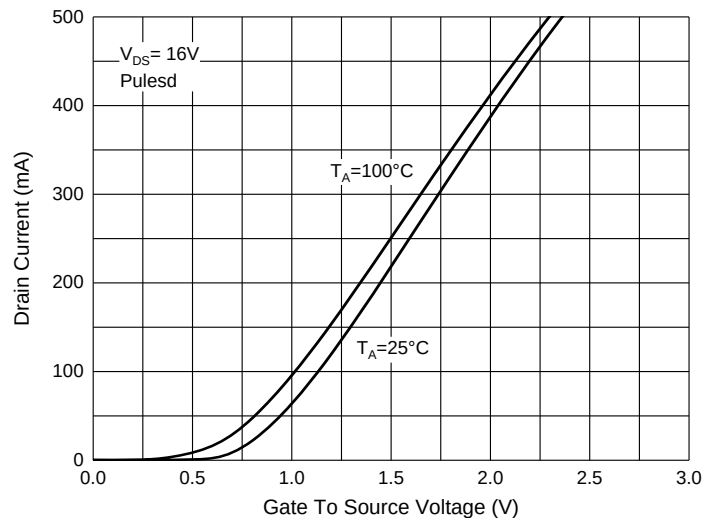


Fig. 3 - $R_{DS(ON)} - I_D$

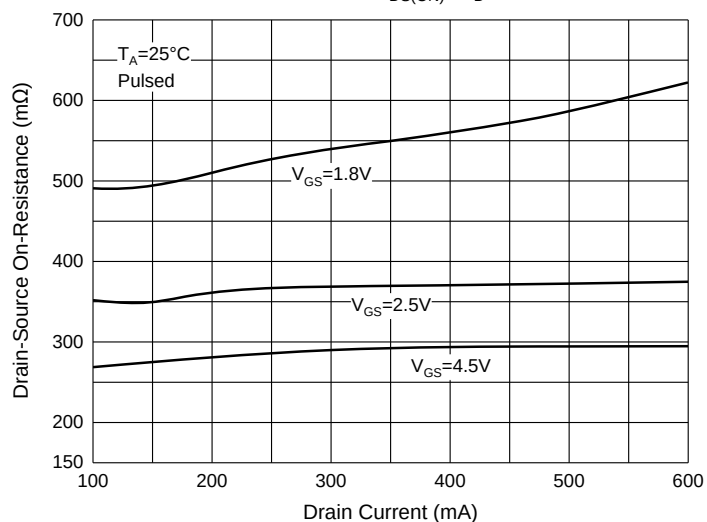


Fig. 4 - $R_{DS(ON)} - V_{GS}$

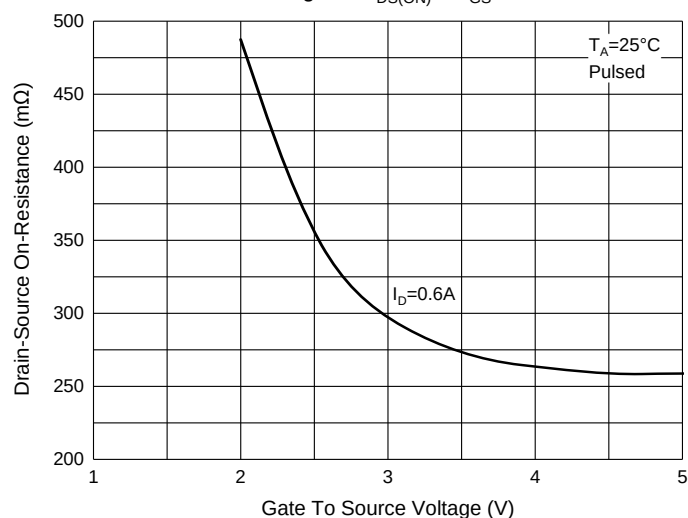


Fig. 5 - $I_S - V_{SD}$

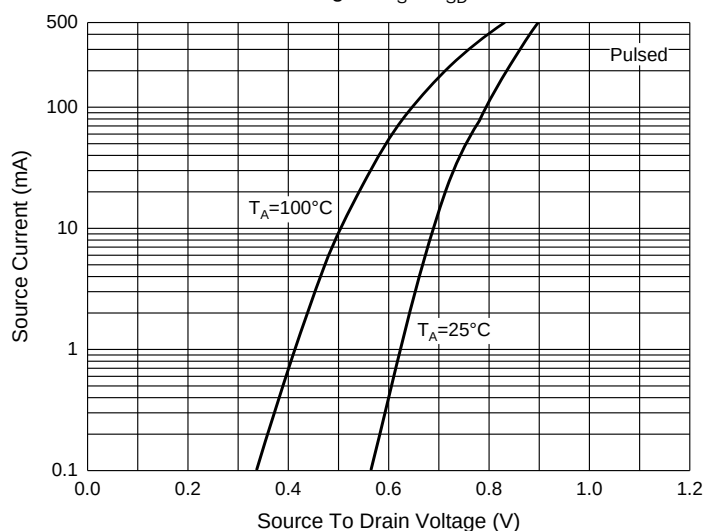
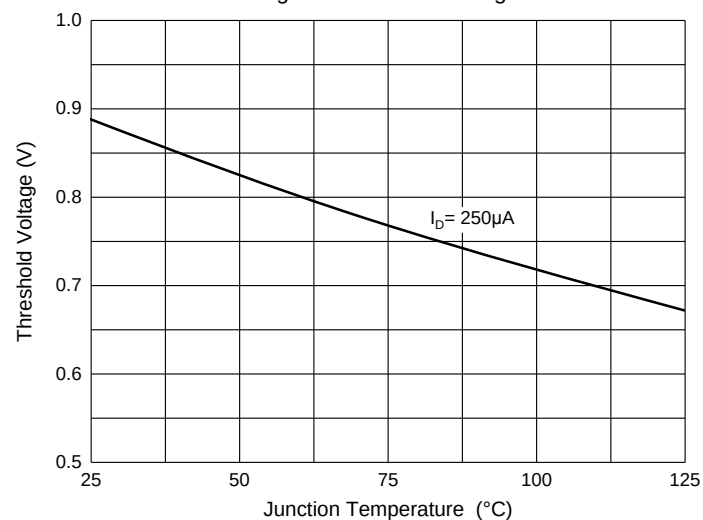


Fig. 6 - Threshold Voltage



Ordering Information

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

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-TP-HF

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