

Features

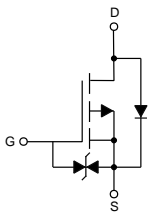
- Operated at Low Logic Level Gate Drive
- P-Channel Switch with Low $R_{DS(on)}$
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

- Operating Junction Temperature Range: -55°C to $+150^{\circ}\text{C}$
- Storage Temperature Range: -55°C to $+150^{\circ}\text{C}$
- Maximum Thermal Resistance: 1250°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous ^(Note 1)	I_D	-0.68	A
Pulsed Drain Current	I_{DM}	-1.2	A
Power Dissipation ^(Note 2)	P_D	0.10	W

Internal Structure

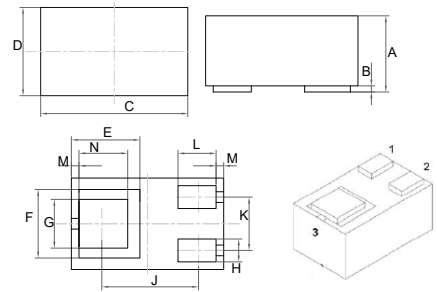


1. GATE
2. SOURCE
3. DRAIN

Marking:39

P-Channel MOSFET

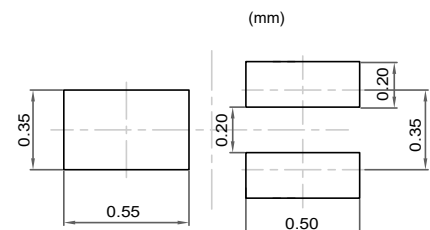
SOT-883



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.018	0.022	0.45	0.55	
B	0.000	0.004	0.01	0.10	
C	0.037	0.041	0.95	1.05	
D	0.022	0.026	0.55	0.65	
E	0.018		0.450		TYP.
F	0.018		0.450		TYP.
G	0.011	0.015	0.27	0.37	
H	0.004	0.008	0.10	0.20	
J	0.025		0.635		TYP.
K	0.012	0.016	0.30	0.40	
L	0.008	0.012	0.20	0.30	
M	0.002		0.050		TYP.
N	0.011	0.015	0.27	0.37	

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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.35		-1.1	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-20V, V_{GS}=0V$			-1.0	μA
Gate-body Leakage Current	I_{GSS}	$V_{GS}=\pm 10V, V_{DS}=0V$			± 20	μA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-1000mA$			0.52	Ω
		$V_{GS}=-2.5V, I_D=-800mA$			0.70	
		$V_{GS}=-1.8V, I_D=-500mA$		0.95		
Forward transconductance	g_{FS}	$V_{DS}=-10V, I_D=-540mA$		1.2		S
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-500mA$			-1.2	V
Dynamic Characteristics (Note 4)						
Input Capacitance	C_{iss}	$V_{DS}=-16V, V_{GS}=0V, f=1MHz$		113	170	pF
Output Capacitance	C_{oss}			15	25	
Reverse Transfer Capacitance	C_{rss}			9	15	
Switching Characteristics (Note 4)						
Turn-on Delay Time ^(Note 3)	$t_{d(on)}$	$V_{DS}=-10V, V_{GS}=-4.5V, I_D=-200mA,$ $R_{GEN}=10\Omega$		9.0		ns
Turn-off Delay Time ^(Note 3)	$t_{d(off)}$			32.7		
Rise Time ^(Note 3)	t_r			5.8		
Fall Time ^(Note 3)	t_f			20.3		

Notes :

1. Surface Mounted On FR4 Board Using The Minimum Recommended Pad Size.
2. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
3. Switching Characteristics are Independent of Operating Junction Temperatures.
4. Guaranteed by Design, Not Subject to Production testing.

Curve Characteristics

Fig. 1 - Output Characteristics

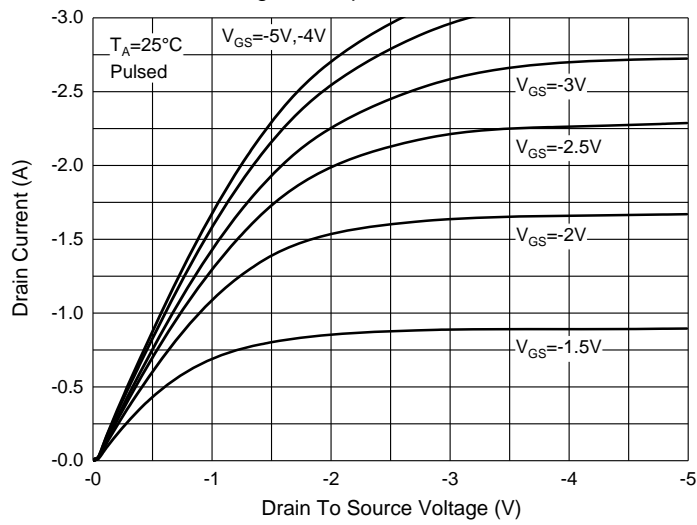


Fig. 2 - Transfer Characteristics

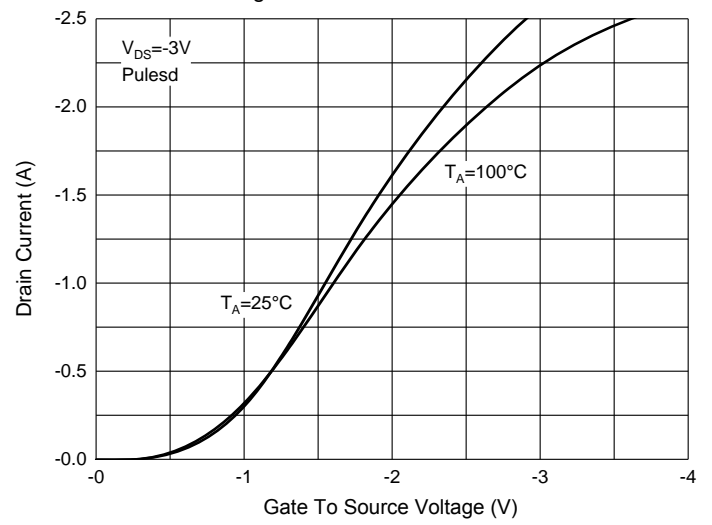


Fig. 3 - $R_{DS(ON)} - I_D$

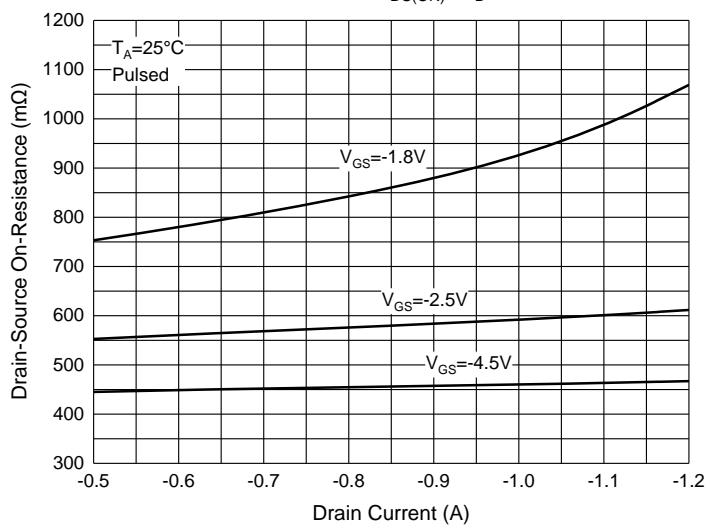


Fig. 4 - $R_{DS(ON)} - V_{GS}$

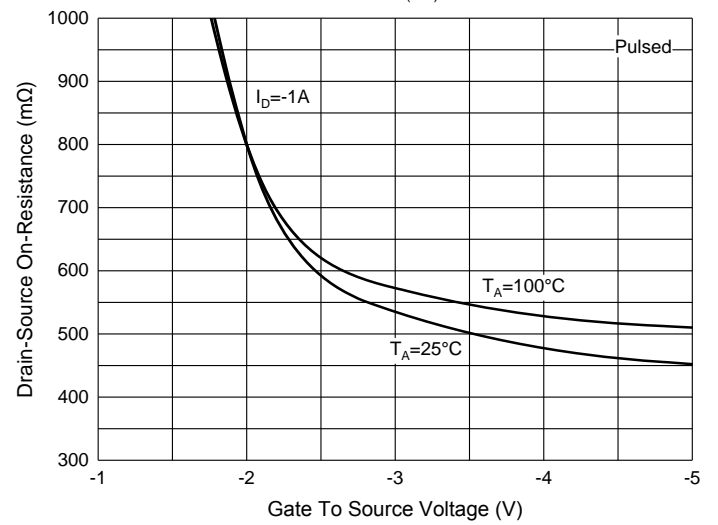


Fig. 5 - $I_S - V_{SD}$

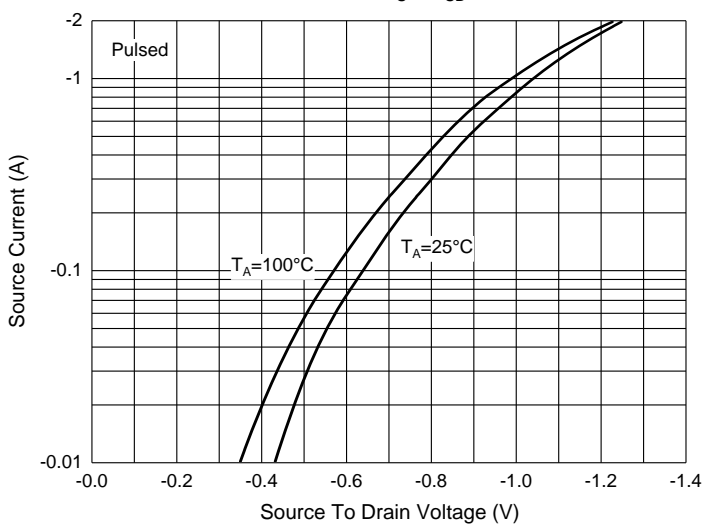
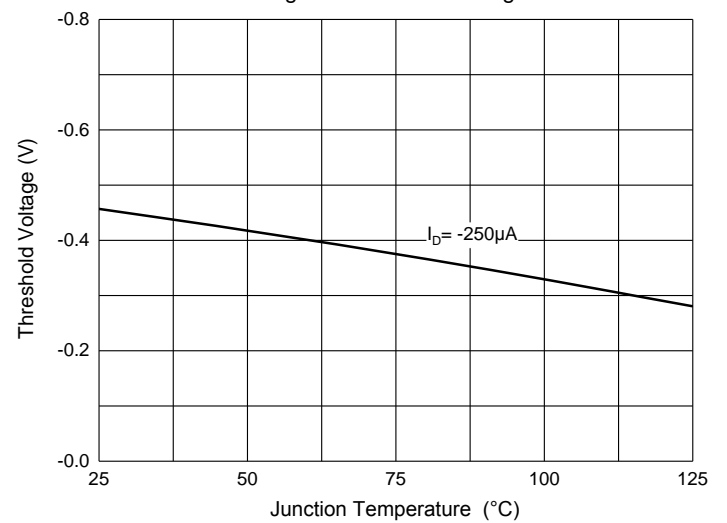


Fig. 6 - Threshold Voltage



Ordering Information

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

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

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