

**Features**

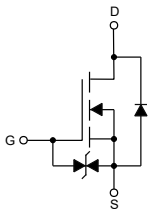
- Operated at Low Logic Level Gate Drive
- N-Channel Switch with Low  $R_{DS(on)}$
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering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

**Maximum Ratings**

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

Parameter	Symbol	Rating	Unit
Drain -source Voltage	$V_{DS}$	20	V
Gate -Source Voltage	$V_{GS}$	$\pm 12$	V
Drain Current-Continuous <sup>(Note 1)</sup>	$I_D$	0.75	A
Pulsed Drain Current	$I_{DM}$	1.8	A
Power Dissipation <sup>(Note 2)</sup>	$P_D$	0.10	W

**Internal Structure**

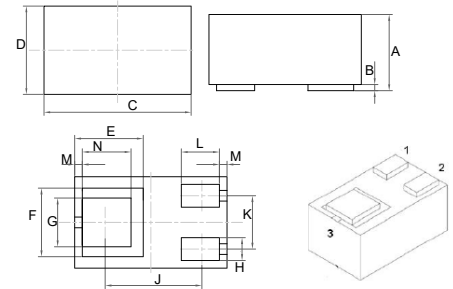


1. GATE
2. SOURCE
3. DRAIN

**Marking:34**

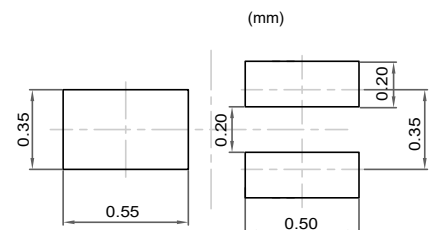
**N-Channel MOSFET**

**SOT-883**



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	20			V
Gate-Threshold Voltage <sup>(Note 2)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.35		1.1	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=20V, V_{GS}=0V$			1.0	$\mu A$
Gate-body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 10V, V_{DS}=0V$			$\pm 20$	$\mu A$
Drain-Source On-Resistance <sup>(Note 2)</sup>	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=650mA$			0.38	$\Omega$
		$V_{GS}=2.5V, I_D=550mA$			0.45	
		$V_{GS}=1.8V, I_D=450mA$			0.80	
Forward transconductance <sup>(Note 2)</sup>	$g_{FS}$	$V_{DS}=10V, I_D=800mA$		1.6		S
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=150mA$			1.2	V
<b>Dynamic Characteristics<sup>(Note 4)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS}=16V, V_{GS}=0V, f=1MHz$		79	120	pF
Output Capacitance	$C_{oss}$			13	20	
Reverse Transfer Capacitance	$C_{rss}$			9	15	
<b>Switching Characteristics<sup>(Note 4)</sup></b>						
Turn-on Delay Time <sup>(Note 3)</sup>	$t_{d(on)}$	$V_{DS}=10V, V_{GS}=4.5V, I_D=500mA, R_{GEN}=10\Omega$		6.7		ns
Turn-off Delay Time <sup>(Note 3)</sup>	$t_{d(off)}$			17.3		
Rise Time <sup>(Note 3)</sup>	$t_r$			4.8		
Fall Time <sup>(Note 3)</sup>	$t_f$			7.4		

**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

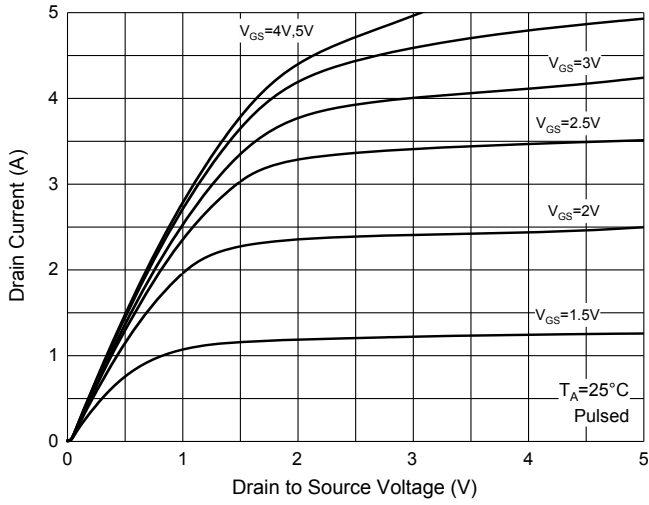


Fig. 2 - Transfer Characteristics

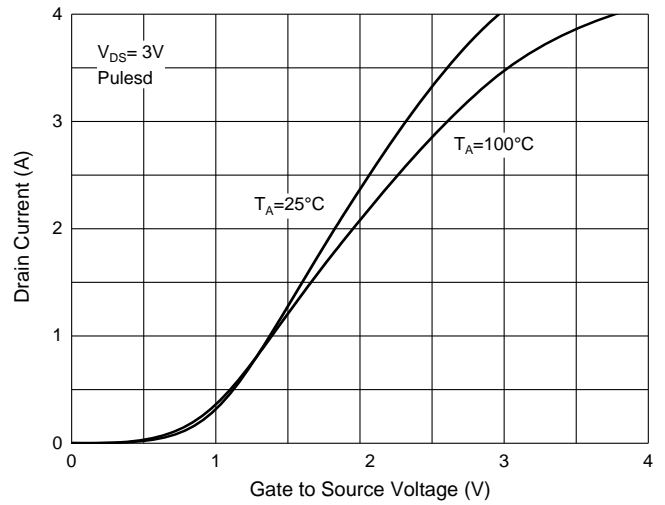


Fig. 3 -  $R_{DS(ON)} - I_D$

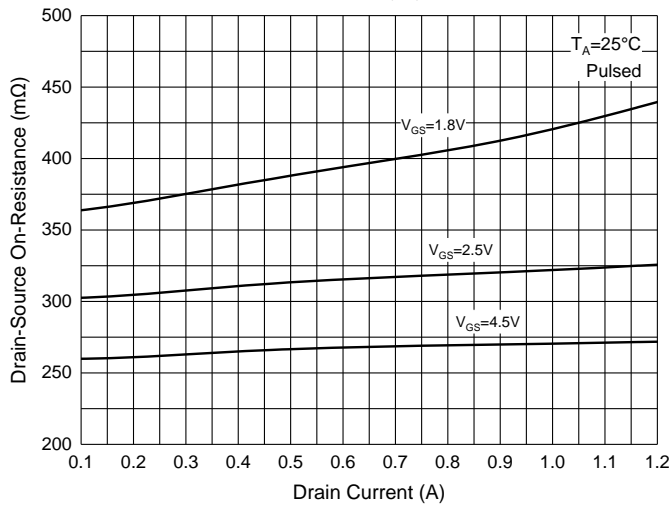


Fig. 4 -  $R_{DS(ON)} - V_{GS}$

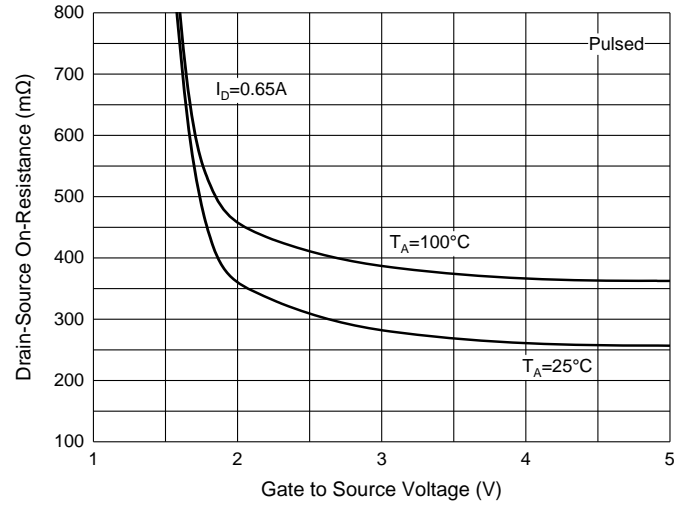


Fig. 5 -  $I_S - V_{SD}$

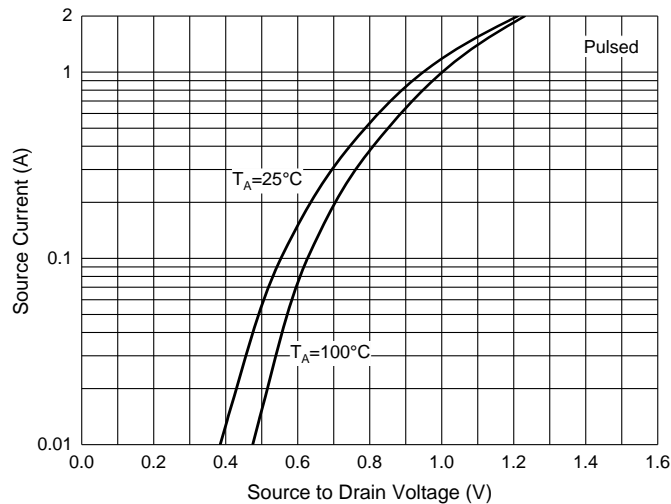
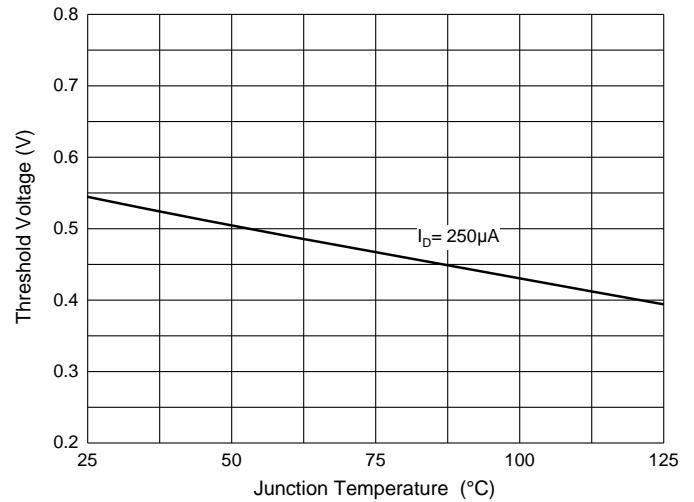


Fig. 6 - Threshold Voltage



## 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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