Features

- Low On-Resistance
- Fast Switching Speed
- 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)

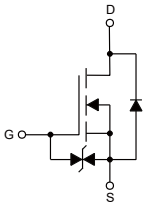
N-Channel MOSFET

Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 833°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	I_D	0.75	A
Pulsed Drain Current(Note 1)	I_{DM}	3.0	A
Power Dissipation(Note 2)	P_D	0.15	W

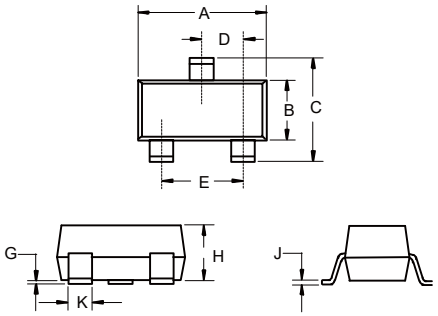
Internal Structure



1. GATE
2. SOURCE
3. DRAIN

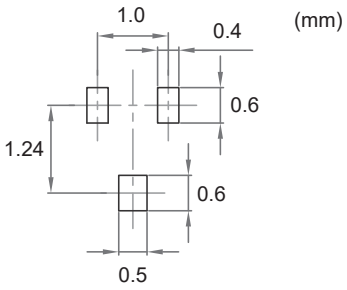
Marking:34K

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



ELECTRICAL CHARACTERISTICS (Ta=25℃ 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-Threshold Voltage(Note 3)	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.35	0.75	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} =± 10V, V_{DS} =0V			±20	μA
Drain-Source On-Resistance(Note 3)	$R_{DS(on)}$	V_{GS}=4.5V, I_D=650mA		0.19	0.38	Ω
		V_{GS}=2.5V, I_D=550mA		0.26	0.45	
		V_{GS}=1.8V, I_D=450mA		0.39	0.80	
Forward transconductance	g_{FS}	V_{DS}=10V, I_D=800mA	1.0			S
Diode Forward Voltage(Note 3)	V_{SD}	V_{GS}=0V, I_S=150mA			1.2	V
Dynamic Characteristics(Note 4)						
Input Capacitance	C_{iss}	V_{DS}=16V,V_{GS}=0V, f=1MHz			120	pF
Output Capacitance	C_{oss}				20	
Reverse Transfer Capacitance	C_{rss}				15	
Switching Characteristics(Note 4)						
Turn-on Delay Time	$t_{d(on)}$	V_{DS}=10V,V_{GS}=4.5V,I_D=500 mA, R_{GEN}=10Ω		6.7		ns
Turn-off Delay Time	$t_{d(off)}$			17.3		
Rise Time	t_r			4.8		
Fall Time	t_f			7.4		

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at Ta=25℃.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle≤0.5%.
4. These parameters have no way to verify.

Curve Characteristics

Fig. 1 - Output Charact eristics

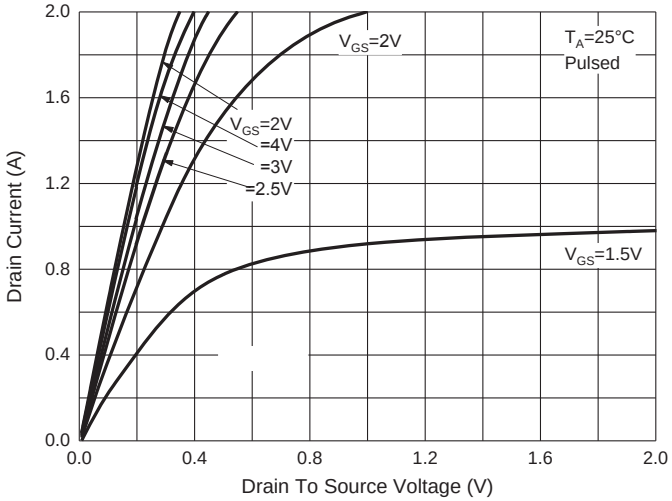


Fig. 2 - Transfer Characteristics

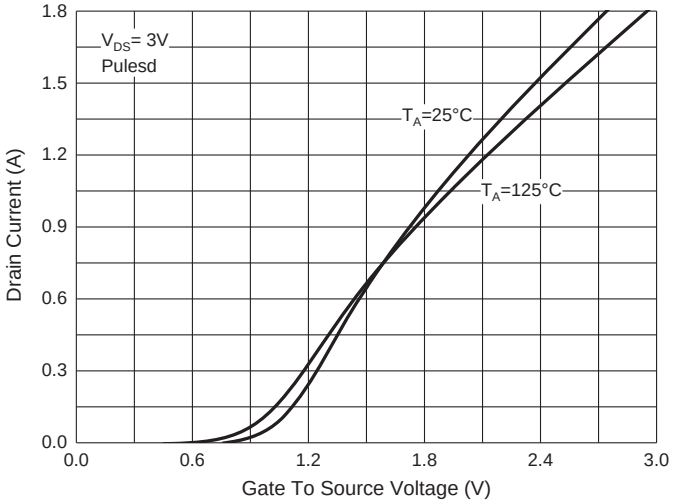


Fig. 3 - $R_{DS(ON)}$—I_D

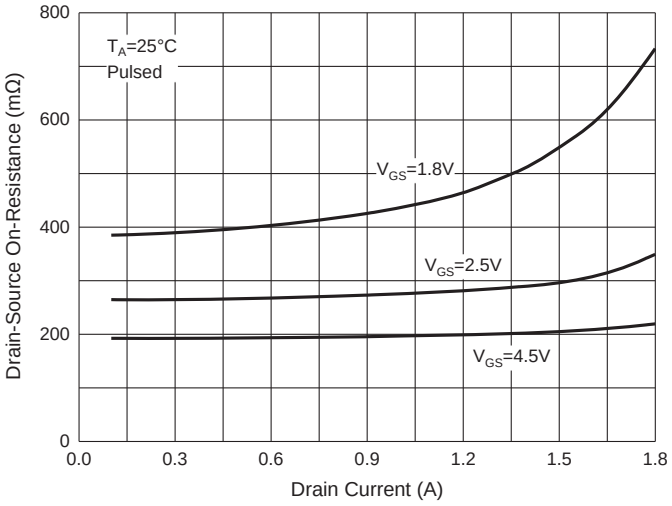


Fig. 4 - $R_{DS(ON)}$—V_{GS}

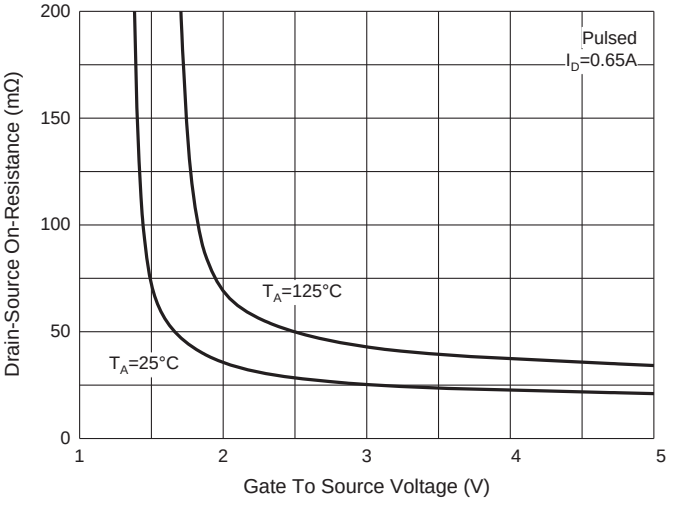


Fig. 3 - I_S—V_{SD}

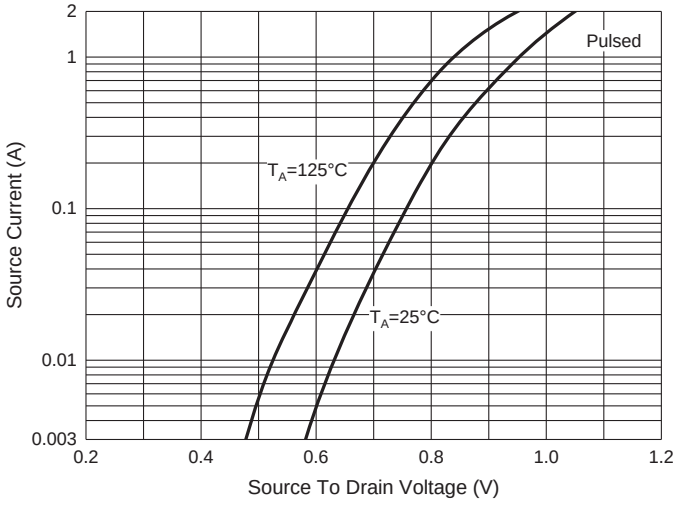
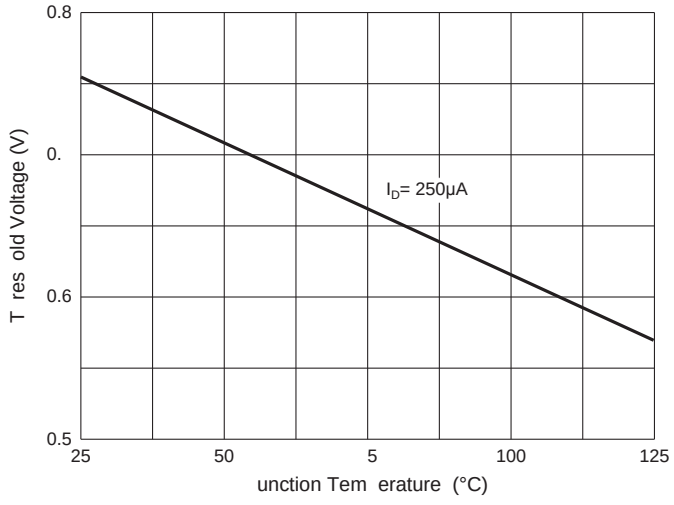


Fig. 6 - T res old Voltage



Ordering Information

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

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