

Features

- P-Channel Switch with Low $R_{DS(on)}$
- 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)

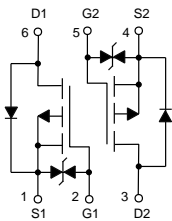
Maximum Ratings

- Operating Junction Temperature Range: -55°C to $+150^{\circ}\text{C}$
- Storage Temperature Range: -55°C to $+150^{\circ}\text{C}$
- Maximum Thermal Resistance: 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	-0.66	A
Drain Current-Pulsed ^(Note 2)	I_{DM}	-2.64	A
Power Dissipation ^(Note 3)	P_D	0.15	W

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

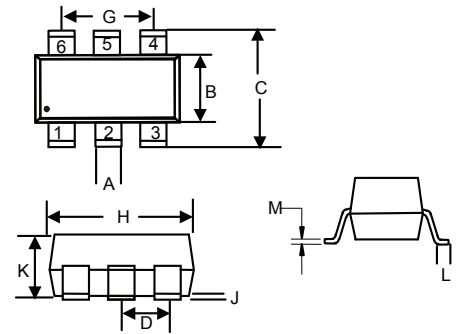
Internal Structure



Marking:39K

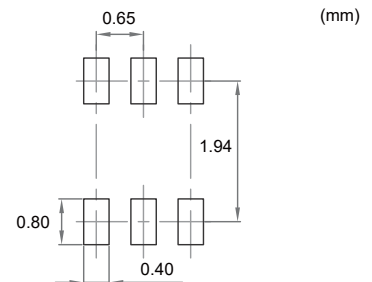
Dual P-Channel MOSFET

SOT-363



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.006	0.014	0.15	0.35	
B	0.045	0.053	1.15	1.35	
C	0.079	0.096	2.00	2.45	
D	0.026		0.65		TYP.
G	0.047	0.055	1.20	1.40	
H	0.071	0.087	1.80	2.20	
J	----	0.004	----	0.10	
K	0.031	0.043	0.80	1.10	
L	0.010	0.018	0.26	0.46	
M	0.003	0.006	0.08	0.15	

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 ^(Note 4)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.35	-0.61	-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 ^(Note 4)	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-1000mA$		0.45	0.52	Ω
		$V_{GS}=-2.5V, I_D=-800mA$		0.65	0.78	
		$V_{GS}=-1.8V, I_D=-500mA$		0.95		
Forward transconductance	g_{FS}	$V_{DS}=-10V, I_D=-540mA$	0.8			S
Diode Forward Voltage ^(Note 4)	V_{SD}	$V_{GS}=0V, I_S=-500mA$			-1.2	V
Dynamic Characteristics^(Note 5)						
Input Capacitance	C_{iss}	$V_{DS}=-16V, V_{GS}=0V, f=1MHz$			175	μF
Output Capacitance	C_{oss}				25	
Reverse Transfer Capacitance	C_{rss}				15	
Switching Characteristics^(Note 5)						
Turn-on Delay Time	$t_{d(on)}$	$V_{DS}=-10V, V_{GS}=-4.5V, I_D=-200mA, R_{GEN}=10\Omega$		9		ns
Turn-off Delay Time	$t_{d(off)}$			32.6		
Rise Time	t_r			5.7		
Fall Time	t_f			20.3		

Notes :

2. Repetitive Rating : Pulse Width Limited by Junction Temperature.
3. This Test is Performed With No Heat Sink at Ta=25°C
4. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$.
5. These Parameters Have No Way to Verify.

Curve Characteristics

Fig. 1 - Output Characteristics

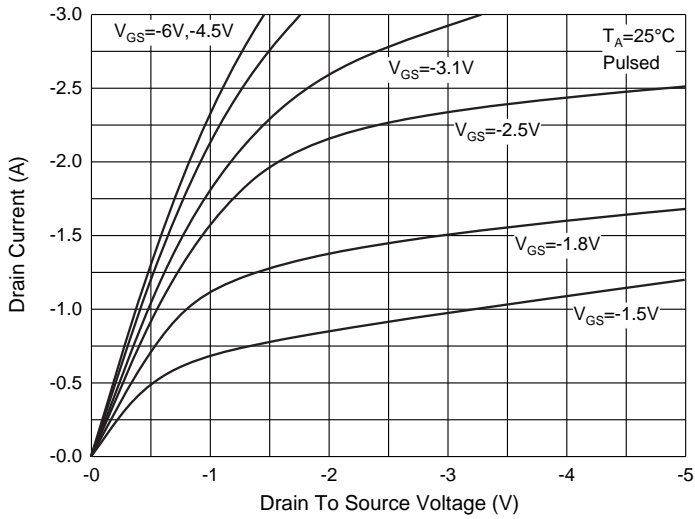


Fig. 2 - Transfer Characteristics

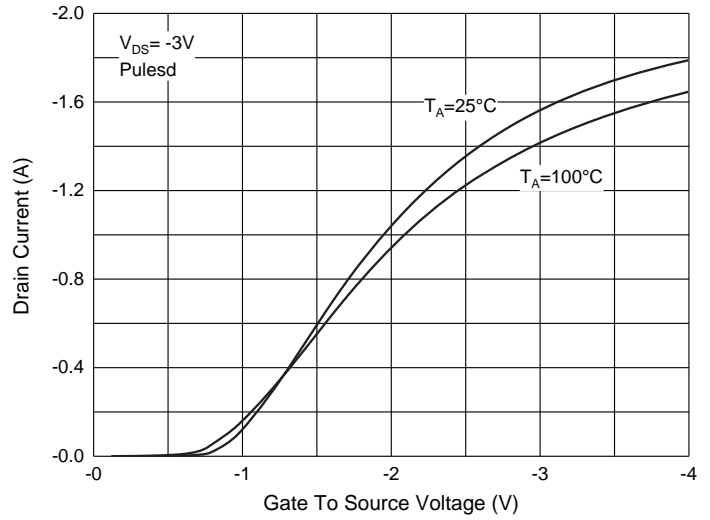


Fig. 3 - $R_{DS(ON)} - I_D$

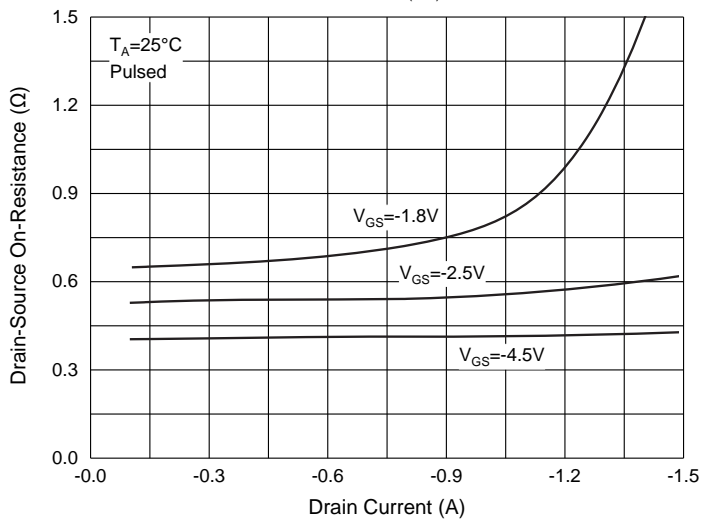


Fig. 4 - $R_{DS(ON)} - V_{GS}$

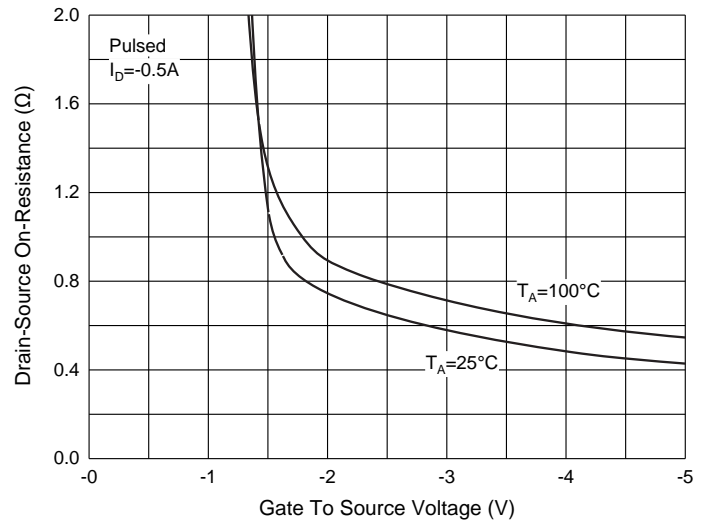


Fig. 5 - $I_S - V_{SD}$

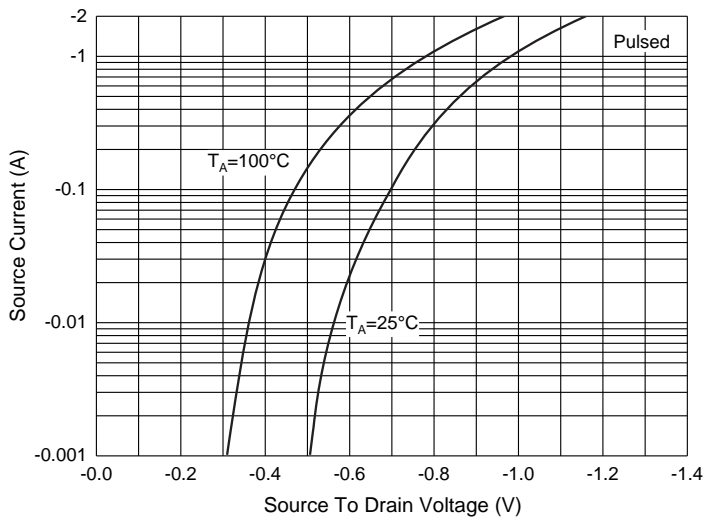
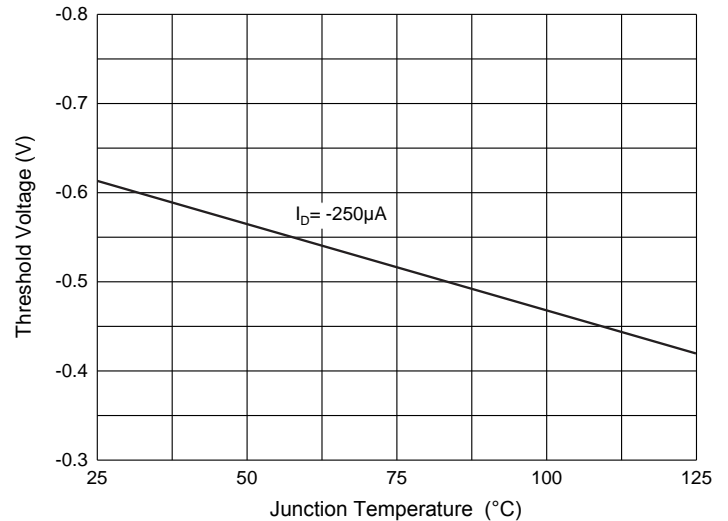


Fig. 6 - Threshold Voltage



Ordering Information

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

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