

### Features

- N-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

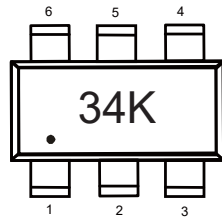
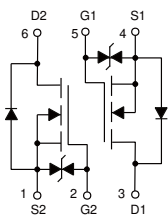
- Operating Junction Temperature Range:  $-55^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$
- Storage Temperature Range:  $-55^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$
- Maximum Thermal Resistance:  $833^{\circ}\text{C/W}$  Junction to Ambient

Parameter	Symbol	Rating	Unit
Drain -source Voltage	$V_{DS}$	20	V
Gate -Source Voltage	$V_{GS}$	$\pm 12$	V
Drain Current-Continuous <sup>(Note2)</sup>	$I_D$	0.75	A
Power Dissipation	$P_D$	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.

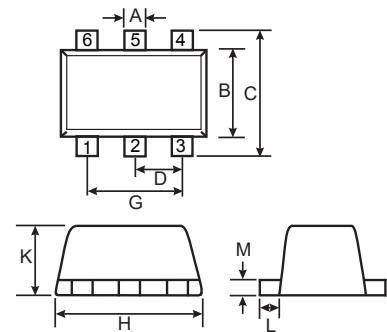
Note: 2. Repetitive Rating : Pulse Width Limited by Junction Temperature.

### Internal Structure and Marking Code



# Dual N-Channel MOSFET

### SOT-563



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.006	0.011	0.15	0.30	
B	0.043	0.051	1.10	1.30	
C	0.059	0.067	1.50	1.70	
D	0.020		0.50		TYP.
G	0.035	0.043	0.90	1.10	
H	0.059	0.067	1.50	1.70	
K	0.022	0.026	0.55	0.65	
L	0.004	0.011	0.10	0.30	
M	0.004	0.007	0.10	0.18	

**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 3)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.35	0.54	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 3)</sup>	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=650mA$		0.27	0.38	$\Omega$
		$V_{GS}=2.5V, I_D=550mA$		0.32	0.45	
		$V_{GS}=1.8V, I_D=450mA$		0.39	0.80	
Forward transconductance <sup>(Note 3)</sup>	$g_{FS}$	$V_{DS}=10V, I_D=800mA$		1.6		S
Diode Forward Voltage <sup>(Note 3)</sup>	$V_{SD}$	$V_{GS}=0V, I_S=150mA$			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	$C_{riss}$			9	15	
<b>Switching Characteristics<sup>(Note 4)</sup></b>						
Turn-on Delay Time	$t_{d(on)}$	$V_{DS}=10V, V_{GS}=4.5V, I_D=500mA, R_{GEN}=10\Omega$		6.7		ns
Turn-off Delay Time	$t_{d(off)}$			17.3		
Rise Time	$t_r$			4.8		
Fall Time	$t_f$			7.4		
Total Gate Charge	$Q_g$	$V_{DS}=10V, V_{GS}=4.5V, I_D=1A$		1.2		nC
Gate-Source Charge	$Q_{gs}$			0.35		
Gate-Drain Charge	$Q_{gd}$			0.2		

**Note :**

3. Pulse Test : Pulse Width $\leq 300\mu s$ , Duty Cycle $\leq 0.5\%$ .

4. Guaranteed by Design, Not subject to Production Testing.

Curve Characteristics

Fig. 1 - Output Characteristics

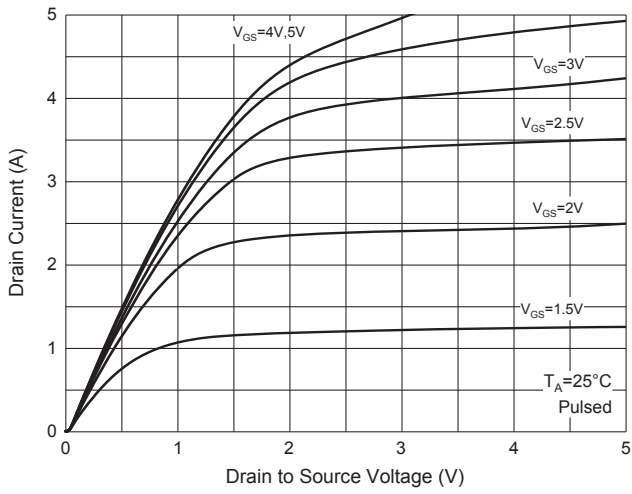


Fig. 2 - Transfer Characteristics

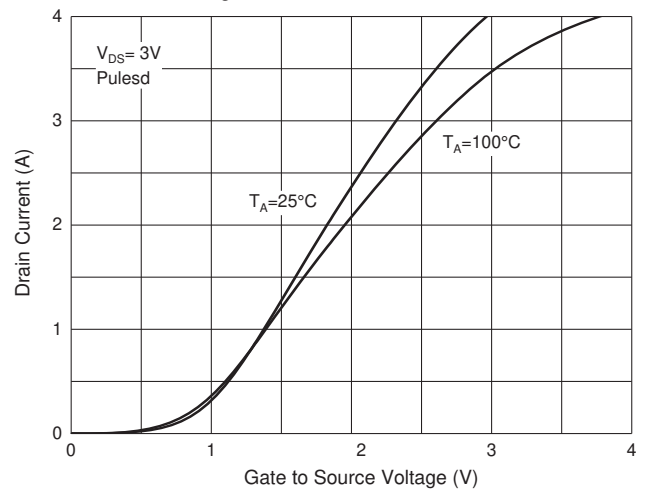


Fig. 3 -  $R_{DS(ON)} - I_D$

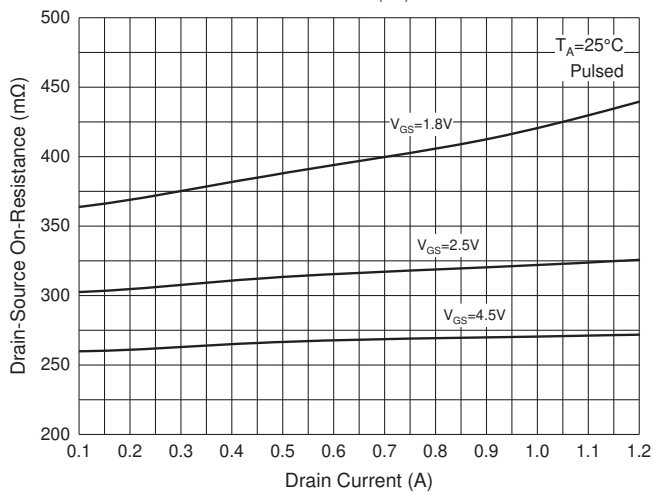


Fig. 4 -  $R_{DS(ON)} - V_{GS}$

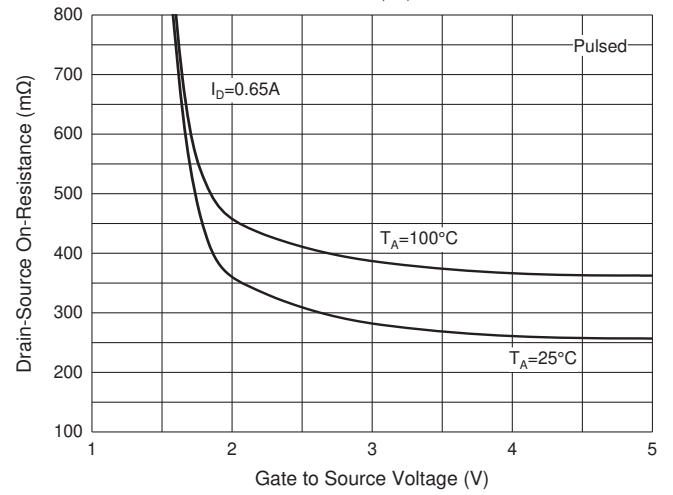


Fig. 5 -  $I_S - V_{SD}$

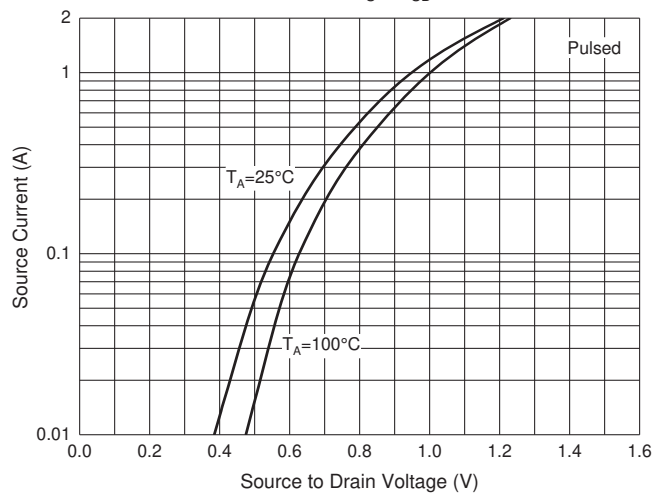
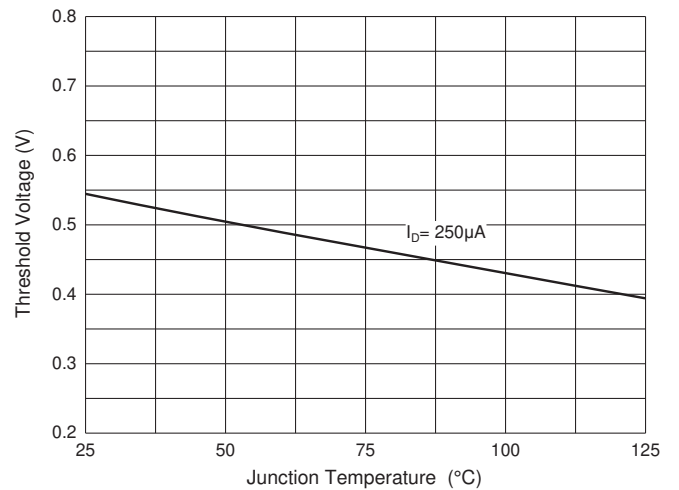


Fig. 6 - Threshold Voltage



## Ordering Information

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

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