

Features

- High Density Cell Design for Ultra Low RDS(ON)
- Fully Characterized Avalanche Voltage and Current
- Excellent Package for Good Heat Dissipation
- 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

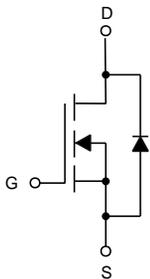
- Operating Junction Temperature : +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 125°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	150	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	4.0	A
Pulsed Drain Current(note2)	I_{DM}	16.0	A
Maximum lead temperature for soldering purposes , 1/8"from case for 5 seconds	T_L	260	°C

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

2. Repetitive Rating:Pulse width limited by maximum junction temperature.

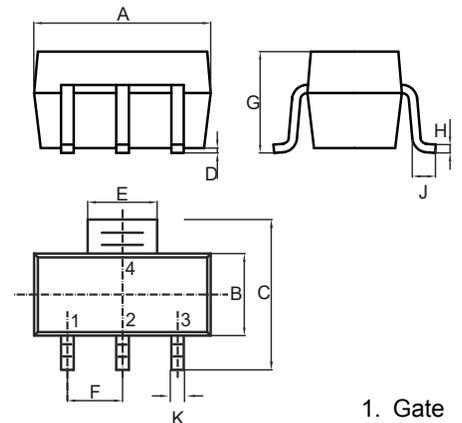
Internal Structure



Marking: T04N15

**N-Channel
Power MOSFET**

SOT-223



- 1. Gate
- 2,4. Drain
- 3. Source

DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.248	0.264	6.30	6.70	
B	0.130	0.146	3.30	3.70	
C	0.264	0.287	6.70	7.30	
D	0.001	0.004	0.02	0.10	
E	0.114	0.122	2.90	3.10	
F	0.091		2.30		TYP.
G	---	0.071	---	1.80	
H	0.009	0.014	0.23	0.35	
J	0.030	---	0.75	---	
K	0.026	0.033	0.66	0.84	

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	150			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=150V, V_{GS}=0V$			1	μA
Gate-Source Leakage Current ^(Note 3)	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Diode Forward Voltage ^(Note 3)	V_{SD}	$V_{GS}=0V, I_S=9A$			1.2	V
On Characteristics^(Note 3)						
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.5	2	2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=4.0A$		0.130	0.160	Ω
Forward Transconductance	gfs	$V_{DS}=15V, I_D=4.0A$	5.0			S
Dynamic Characteristics^(Note 4)						
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		900		pF
Output Capacitance	C_{oss}			115		
Reverse Transfer Capacitance	C_{rss}			70		
Switching Characteristics^(Note 4)						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=75V, R_G=6.0\Omega, I_D=1.0A,$ $V_{GS}=10V, R_L=75\Omega,$		8.0		ns
Turn-On Rise Time	t_r			10.0		
Turn-Off Delay Time	$t_{d(off)}$			20.0		
Turn-Off Fall Time	t_f			15.0		
Total Gate Charge	Q_g	$V_{DS}=75V, I_D=1.5A, V_{GS}=10V$		19.0		nC
Gate-Source Charge	Q_{gs}			5.5		
Gate-Drain Charge	Q_{gd}			7.0		

Note :

 3. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

4. These parameters have no way to verify.

Curve Characteristics

Fig. 1 - Output Characteristics

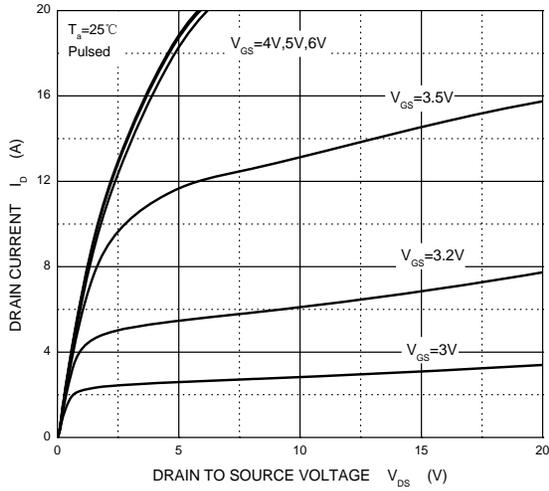


Fig. 2 - Transfer Characteristics

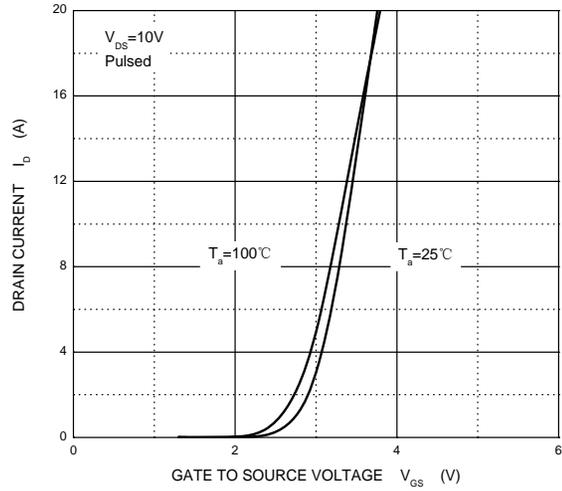


Fig. 3 - $R_{DS(ON)} - I_D$

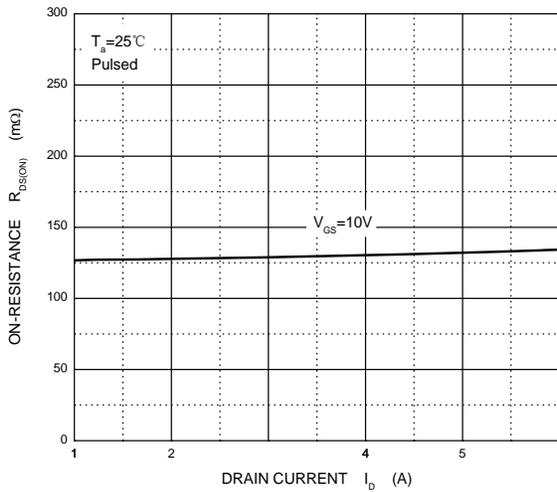


Fig. 4 - $R_{DS(ON)} - V_{GS}$

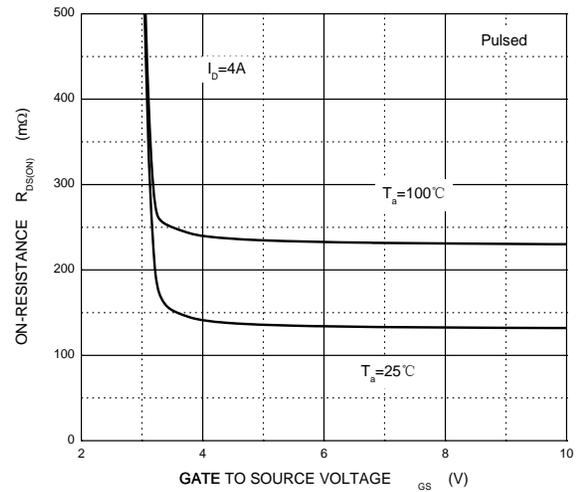


Fig. 5 - $I_S - V_{SD}$

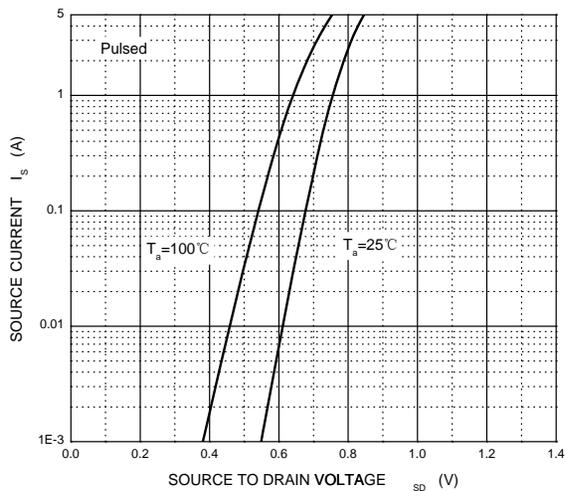
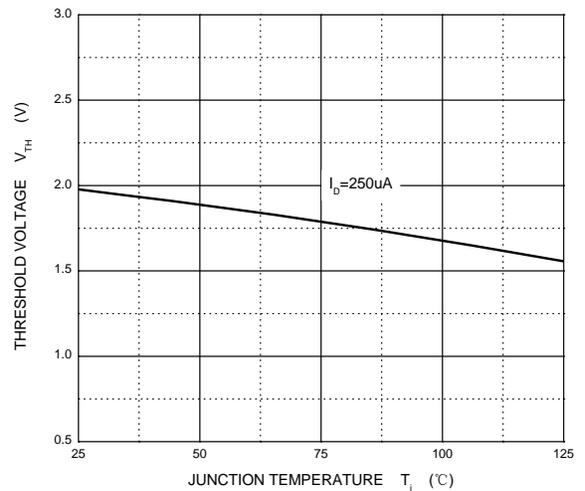


Fig. 6 - Threshold Voltage



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 2.5Kpcs/Reel

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