Features

- Ultra Low Gate Charge
- Low Reverse Transfer Capacitance
- Fast Switching Capability
- 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)

N-CHANNEL MOSFET

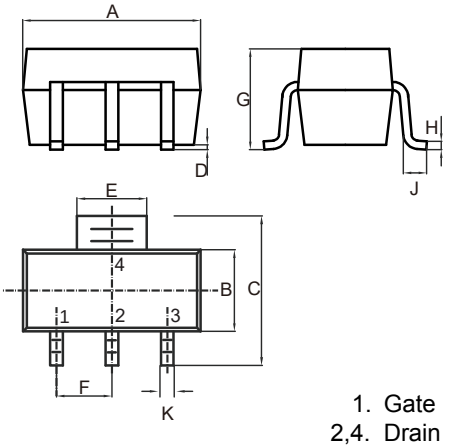
Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 100°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Volltage	V_{GS}	±20	V
Continuous Drain Current	I_D	3.7	A
Pulsed Drain Current	I_{DM}	14.8	A

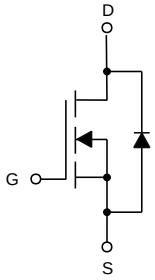
Note: 1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

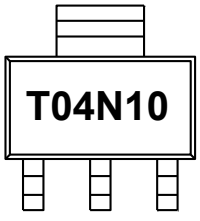
SOT-223



1. Gate
2,4. Drain
3. Source

Internal Structure and Marking Code





DIMENSIONS					
DIM	INCHES		MM		NOTE
	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=250μA	100			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =100V, V_{GS} =0V			1	μA
Gate-Source Leakage Current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
On Characteristics(Note 2)						
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1.2	2	2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=5A		0.115	0.14	Ω
Dynamic Characteristics(Note 3)						
Input Capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V,f =1MHz		690		pF
Output Capacitance	C_{oss}			120		
Reverse Transfer Capacitance	C_{rss}			90		
Switching Characteristics(Note 3)						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=30V, R_G=2.5Ω, I_D=2A, V_{GS}=10V		11		ns
Turn-On Rise Time	t_r			7.4		
Turn-Off Delay Time	$t_{d(off)}$			35		
Turn-Off Fall Time	t_f			9.1		
Total Gate Charge	Q_g	V_{DS}=30V, I_D=3A,V_{GS}=10V		15.5		nC
Gate-Source Charge	Q_{gs}			3.2		
Gate-Drain Charge	Q_{gd}			4.7		
Drain-Source Diode Characteristics and Maximum Ratings						
Continuous Drain-Source Diode Forward Current	I_S				9.6	A
Pulsed Drain-Source Diode Forward Current	I_{SM}				38.4	
Diode Forward Voltage(Note 2)	V_{SD}	V_{GS}=0V, I_S=9A			1.2	V

Note: 2. Pulse Test : Pulse Width≤300μs, Duty Cycle≤2%.

3. Guaranteed by Design, Not Subject to Production Testing.

Curve Characteristics

Fig. 1 - Output Charact eristics

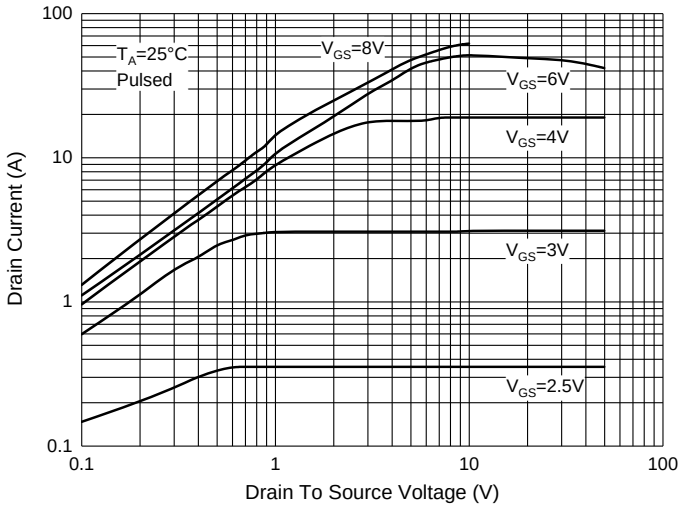


Fig. 2 - Transfer Characteristics

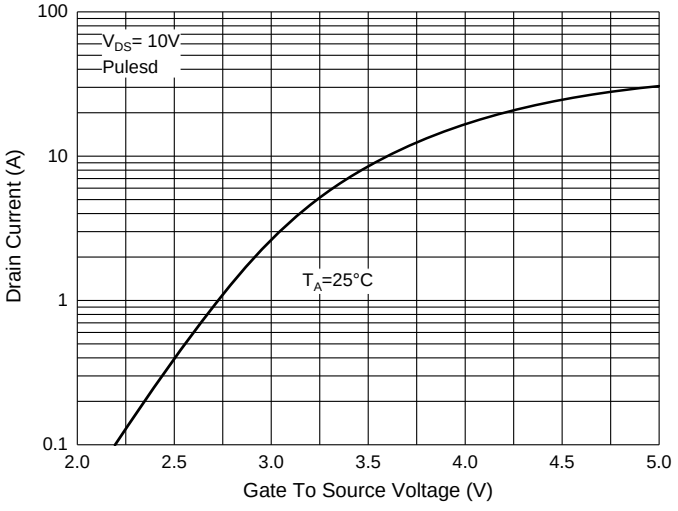


Fig. 3 - $R_{DS(ON)}$—I_D

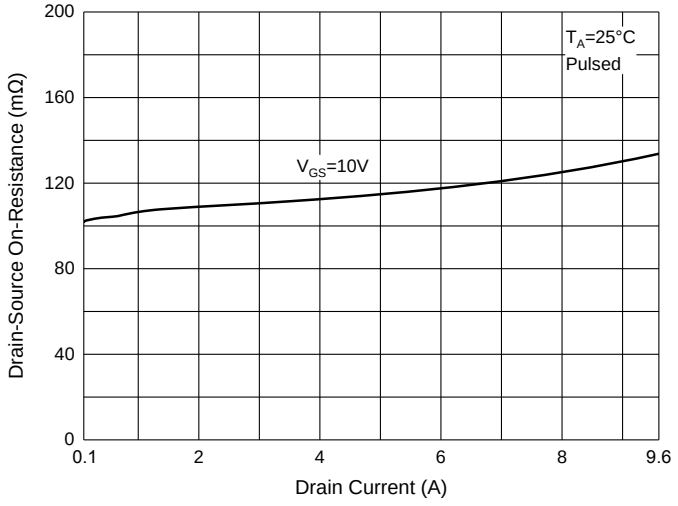


Fig. 4 - $R_{DS(ON)}$—V_{GS}

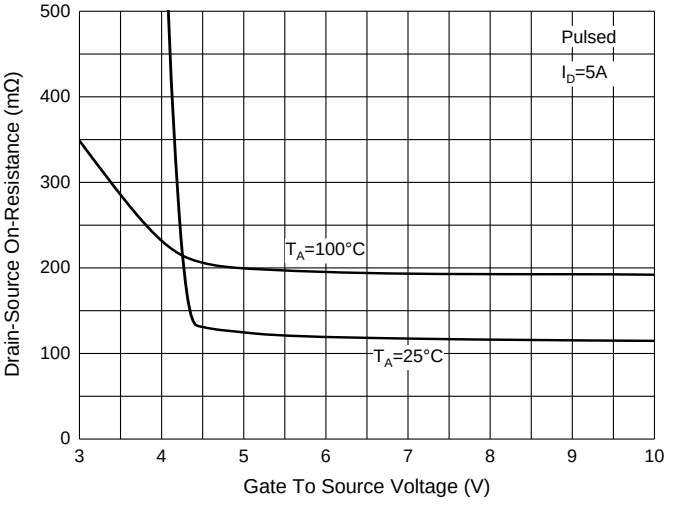


Fig. 5 - I_S—V_{SD}

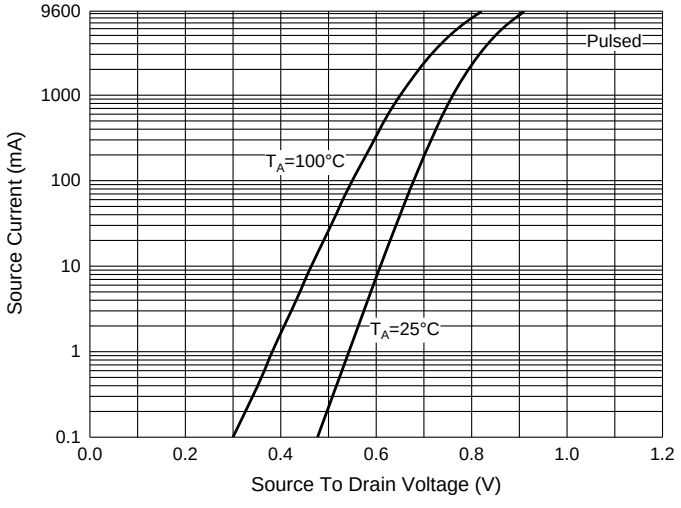
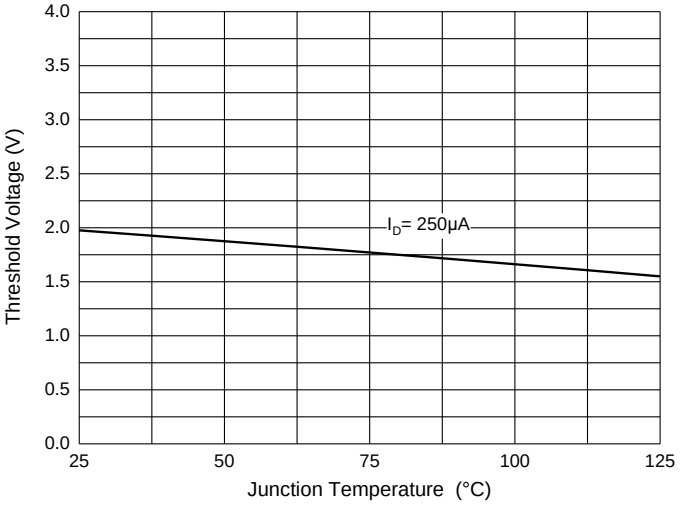


Fig. 6 - Threshold Voltage



Ordering Information

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

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