Features

- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. “Green” Device (Note 1)

N-Channel Enhancement Mode Field Effect Transistor

Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 104°C/W Junction to Ambient(Note 2)

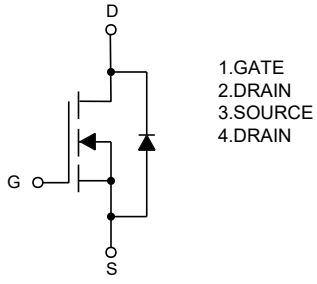
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Volltage	V_{GS}	±20	V
Drain Current	I_D	3.0	A
Pulsed Drain Current(Note3)	I_{DM}	10	A
Total Power Dissipation	P_D	1.2	W

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

2. Surface mounted on FR4 board , t≤10s.

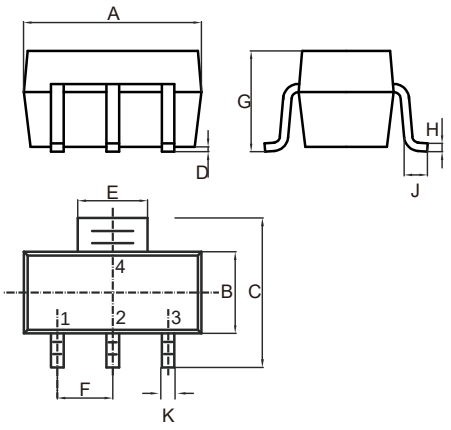
3. Repetitive rating : Pulse width limited by junction temperature.

Internal Structure:



1.GATE
2.DRAIN
3.SOURCE
4.DRAIN

SOT-223



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
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	60			V
Gate-Source Leakage Current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =60V, V_{GS} =0V			1	μA
Gate-Threshold Voltage(Note 4)	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.5		2.0	V
Drain-Source On-Resistance(Note 4)	$R_{DS(on)}$	V_{GS}=10V, I_D=3A			105	mΩ
		V_{GS}=4.5V, I_D=3A			125	
Diode Forward Voltage(Note 4)	V_{SD}	V_{GS}=0V, I_S=3A			1.2	V
Forward Tranconductance(Note 4)	g_{FS}	V_{DS} =15V, I_D =2A	1.4			S
Dynamic Characteristics(Note 5)						
Input Capacitance	C_{iss}	V_{DS}=30V,V_{GS}=0V,f =1MHz		247		pF
Output Capacitance	C_{oss}			34		
Reverse Transfer Capacitance	C_{rss}			19.5		
Switching Characteristics(Note 5)						
Total Gate Charge	Q_g	V_{DS}=30V,V_{GS}=4.5V,I_D=3A		6		nC
Gate-Source Charge	Q_{gs}			1		
Gate-Drain Charge	Q_{gd}			1.3		
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V,V_{DD}=30V,I_D=1.5A, R_{GEN}=1Ω		6		ns
Turn-On Rise Time	t_r			15		
Turn-Off Delay Time	$t_{d(off)}$			15		
Turn-Off Fall Time	t_f			10		

Note:

4. Pulse Test : Pulse Width≤300μs, Duty Cycle≤0.5%.

5. Guaranteed by design, not subject to producting.

Curve Characteristics

Fig. 1 - Output Characteristics

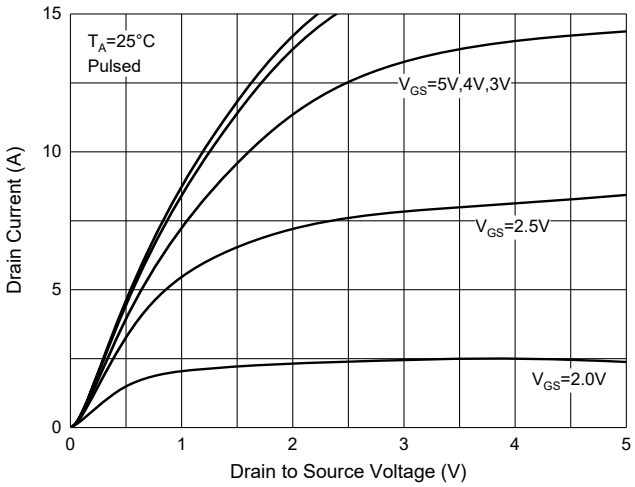


Fig. 2 - Transfer Characteristics

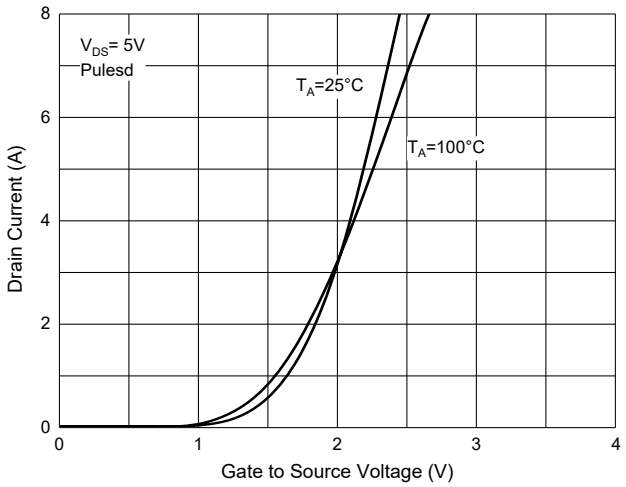


Fig. 3 - $R_{DS(ON)}$—I_D

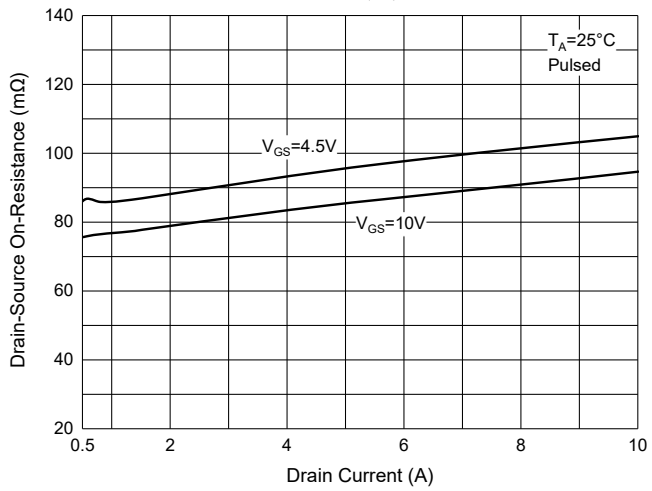


Fig. 4 - $R_{DS(ON)}$—V_{GS}

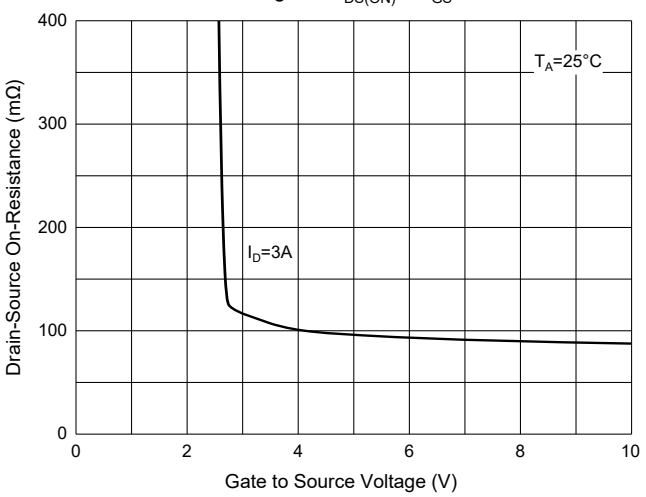


Fig. 5 - I_S—V_{SD}

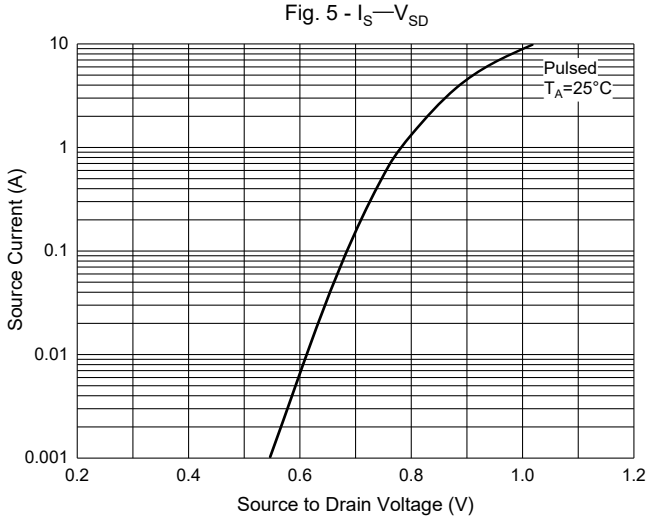
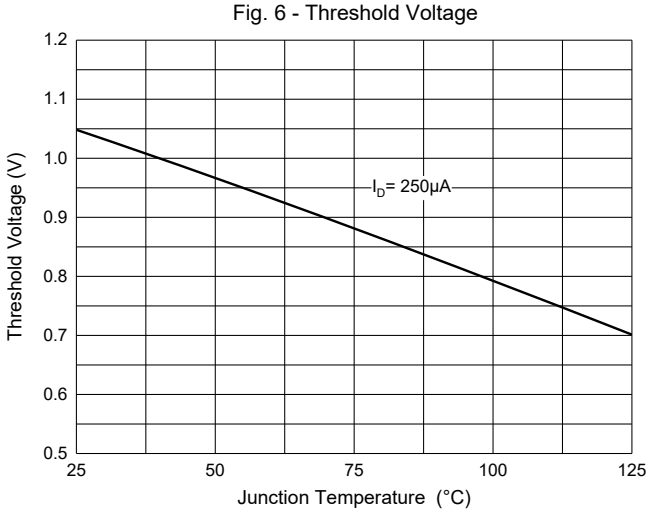


Fig. 6 - Threshold Voltage



Ordering Information

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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Micro Commercial Components (MCC):

MCT03N06-TP