

### 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)

### Maximum Ratings

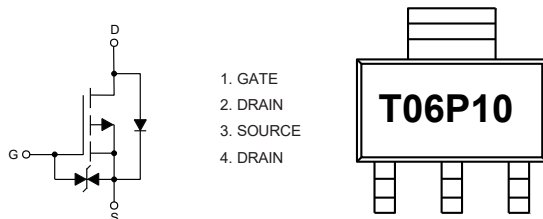
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	-100	V
Gate-Source Voltage	$V_{GS}$	±20	V
Drain Current	$I_D$	-6.0	A
Pulsed Drain Current <sup>(Note2,3)</sup>	$I_{DM(Silicon\ limit)}$	-30	A
	$I_{DM(Package\ limit)}$	-20	
Total Power Dissipation	$P_D$	1.25	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.

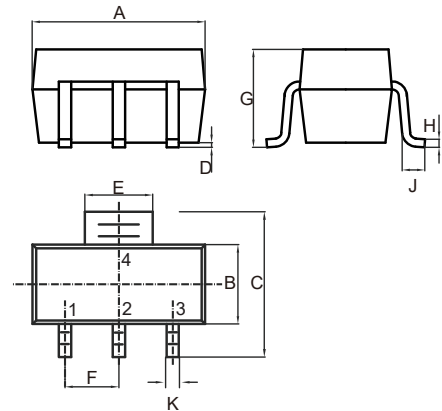
- 2.Surface Mounted on 6cm<sup>2</sup> FR4 Board, t ≤ 10 sec.  
3.The Maximum Current Rating is Package Limited.

### Internal Structure and Marking Code



## P-Channel Power MOSFET

### SOT-223



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
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-100			V
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 16V$			$\pm 10$	$\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-100V, V_{GS}=0V$			-1	$\mu A$
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.2	-1.75	-2.8	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-6A$			205	m $\Omega$
		$V_{GS}=-4.5V, I_D=-6A$			250	
Forward Transconductance	$g_{FS}$	$V_{DS}=-15V, I_D=-5A$	10			S
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=-25V, V_{GS}=0V, f=1MHz$		760		pF
Output Capacitance	$C_{oss}$			260		
Reverse Transfer Capacitance	$C_{rss}$			170		
<b>Switching Characteristics</b>						
Total Gate Charge	$Q_g$	$V_{DD}=-50V, V_{GS}=-10V, I_D=-6A$		25		nC
Gate-Source Charge	$Q_{gs}$			5		
Gate-Drain Charge	$Q_{gd}$			7		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-50V, V_{GEN}=-10V$ $I_D=-6A, R_{GEN}=9.1\Omega$		14		ns
Turn-On Rise Time	$t_r$			18		
Turn-Off Delay Time	$t_{d(off)}$			50		
Turn-Off Fall Time	$t_f$			18		
<b>Drain-Source Body Diode Characteristics</b>						
Diode Forward Current	$I_S$				-13	A
Diode Forward Voltage	$V_{SD}$	$I_{SD}=-6A, V_{GS}=0V$			-1.2	V
Reverse Recovery Time	$t_{rr}$	$I_F=-6A, di/dt=100A/\mu s$		35		ns
Reverse Recovery Charge	$Q_{rr}$				46	
Forward Turn-On Time	$T_{on}$	Intrinsic Turn-On Time is Negligible (Turn-On is Dominated by LS+LD)				

**Curve Characteristics**

Fig. 1 - Output Characteristics

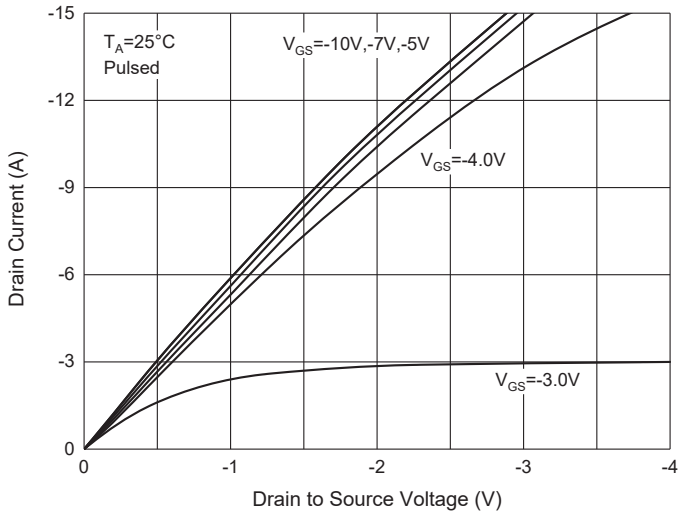


Fig. 2 -  $R_{DS(ON)}$ —Temperature

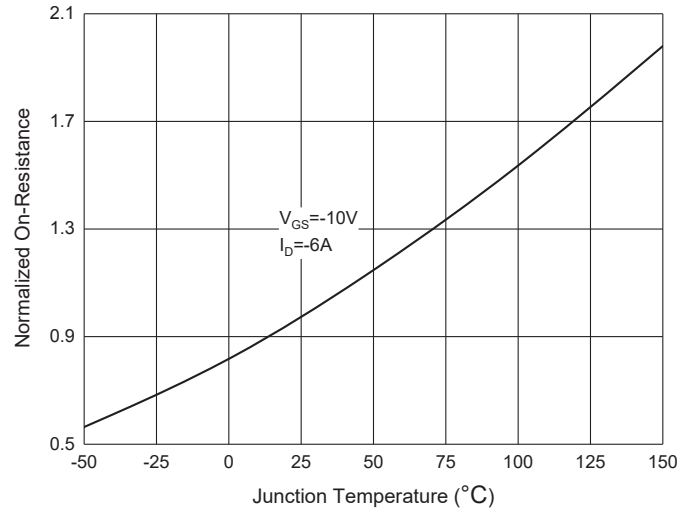


Fig. 3 - Transfer Characteristics

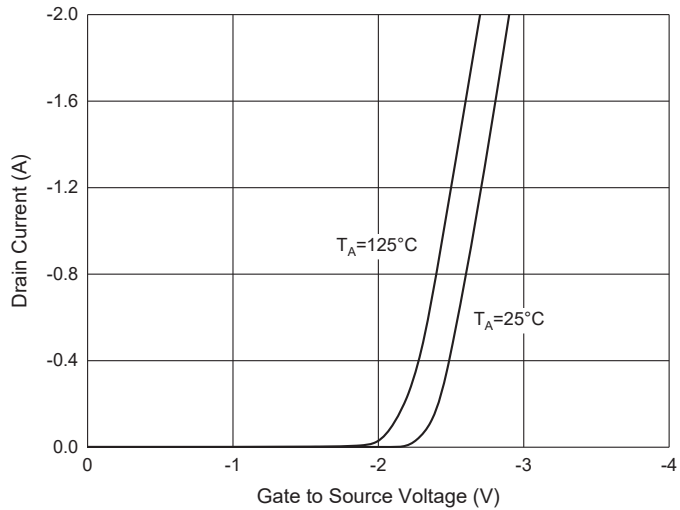


Fig. 4 - Gate Charge

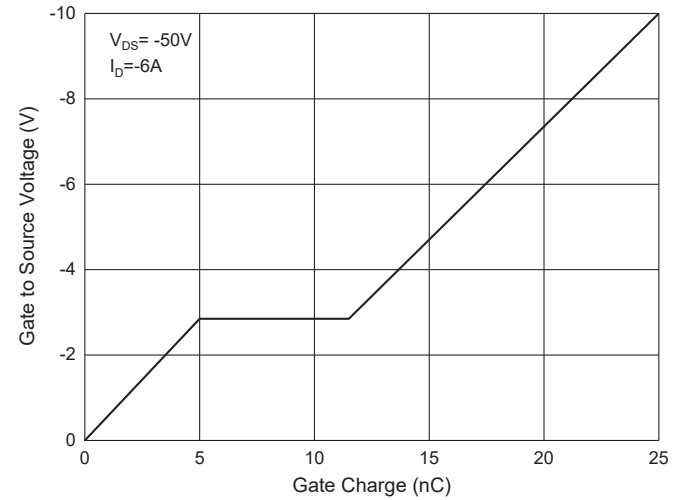


Fig. 5 -  $I_S$ — $V_{SD}$

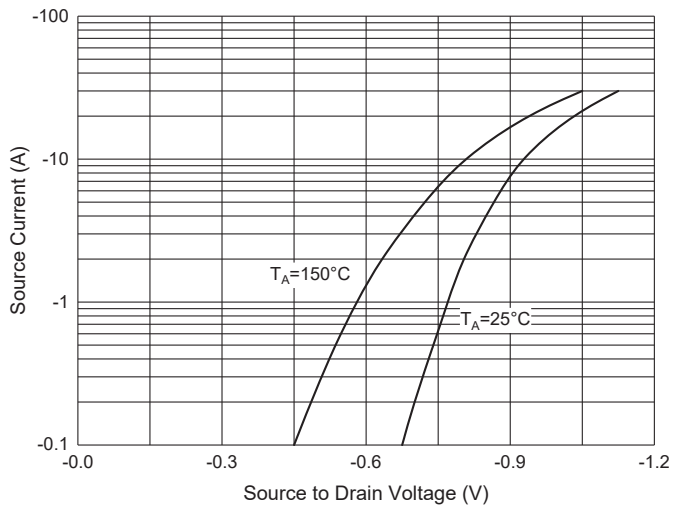


Fig. 6 -  $R_{DS(ON)}$ — $I_D$

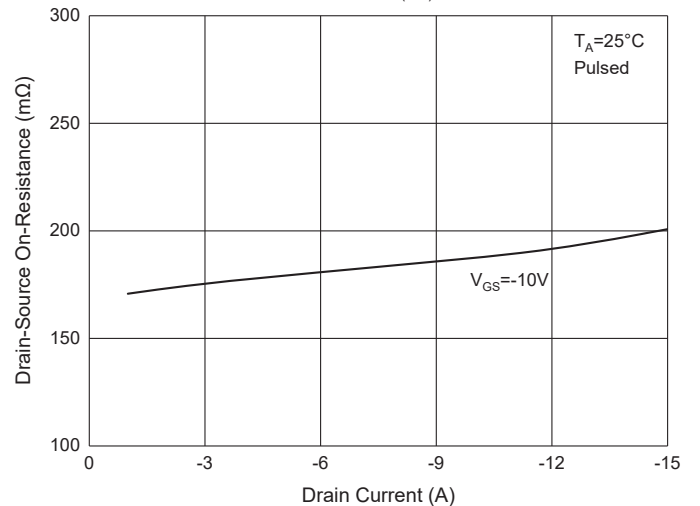
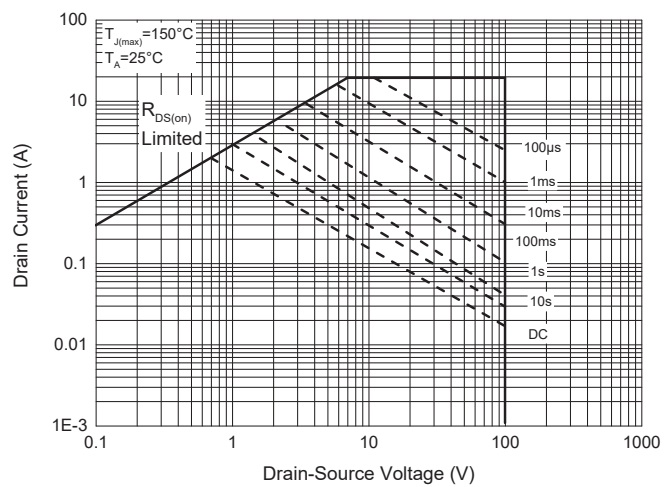


Fig. 7 - Safe Operation Area



## Ordering Information

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

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