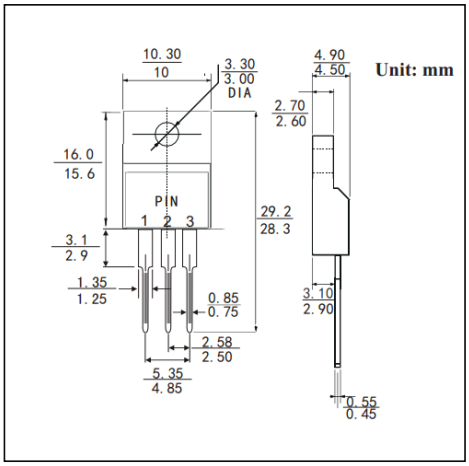
TO-220F Plastic-Encapsulate MOSFETS

FEATURE

- High Current Rating
- Lower Rds(on)
- Lower Capacitance
- Lower Total Gate Charge
- Tighter VSD Specifications
- Avalanche Energy Specified
- 900V N-Channel Power MOSFET

MECHANICAL DATA

- Case style:TO-220F moldeplastic
- Mounting position:any



MAXIMUM RATINGS AND CHARACTERISTICS

@ 250C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	900	V
Gate-Source Voltage	V_{GSS}	±30	
Continuous Drain Current	I_D	6.0	A
Continuous Drain-Source Diode Forward Current	I_S	6.0	
Single Pulsed Avalanche Energy (note1)	E_{AS}	320	mJ
Thermal Resistance fromJunction to Ambient	$R_{\theta JA}$	62.5	℃/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 ~+150	℃
Maximum lead temperure for soldering purposes , 1/8"from case for 5 seconds	T_L	260	

MOSFET ELECTRICAL CHARACTERISTICS T_A=25℃ unless otherwise specified

Parameter	Symbol	TestCondition	Min	Typ	Max	Unit
Offcharacteristics						
Drain-sourcebreakdownvoltage	$V_{(BR)DSS}$	V_{GS} = 0 V , I_D =250μA	900			V
Drain-source diode forward voltage(note2)	V_{SD}	V_{GS} = 0 V , I_S =6.0A			1.5	
Zero gate voltage drain current	I_{DSS}	V_{DS} =900V, V_{GS} =0V			1	uA
Gate-body leakage current, forward(note2)	I_{GSSF}	V_{DS} =0V, V_{GS} =30V			100	nA
Gate-body leakage current, reverse(note2)	I_{GSSR}	V_{DS} =0V, V_{GS} =-30V			-100	
On characteristics (note2)						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	2.0	3.7	4.0	V
Staticdrain-sourceon-resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =3.0A	1.6	1.62	1.8	Ω
Forward transconductance	g_{fs}	V_{DS} =15V, I_D =3A		6		S
Dynamic characteristics (note 3)						
Inputcapacitance	C_{iss}	V_{DS} =25V,V_{GS} =0V,f =1MHz		1400		pF
Outputcapacitance	C_{oss}			1800		
Reverse transfer capacitance	C_{rss}			538		
Switching characteristics						
Total gate charge	Q_g	V_{DS} =300V,V_{GS} =10V,I_D =6.0A		47.8		nC
Gate-sourcecharge	Q_{gs}			8.1		
Gate-draincharge	Q_{gd}			25		
Turn-on delay time (note3)	$t_{d(on)}$	V_{DD}=325V, V_{GS}=10V, R_G=4.7Ω, I_D =6.0A		10		ns
Turn-on rise time (note3)	t_r			10		
Turn-off delay time (note3)	$t_{d(off)}$			37		
Turn-off fall time (note3)	t_f			13		

Notes :

1. L=10mH, I_L=6A,V_{DD}=100V, V_{GS}=10V,R_G=25Ω,Starting T_J=25℃.
2. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.
3. These parameters have no way to verify.

Rating and Characteristic Curves

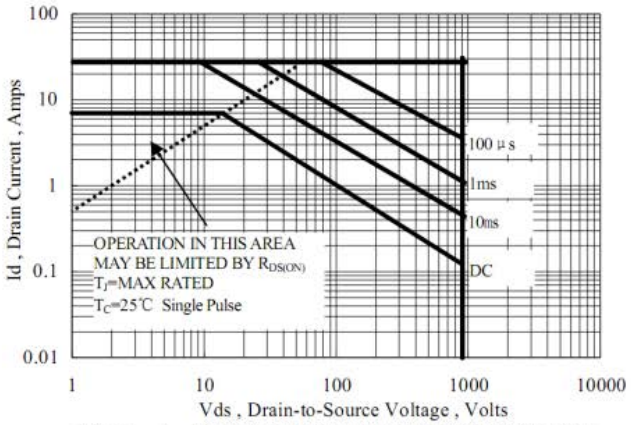


Figure 1 Maximum Forward Bias Safe Operating Area

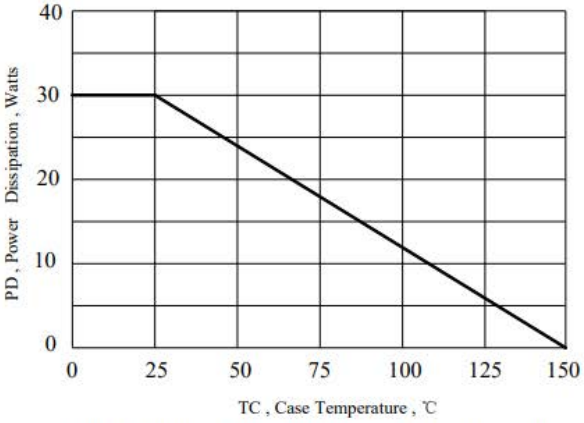


Figure 2 , Maximum Power Dissipation vs Case Temperature

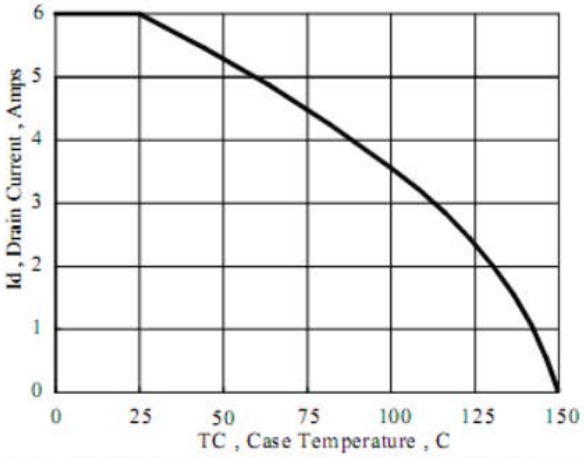


Figure 3 Maximum Continuous Drain Current vs Case Temperature

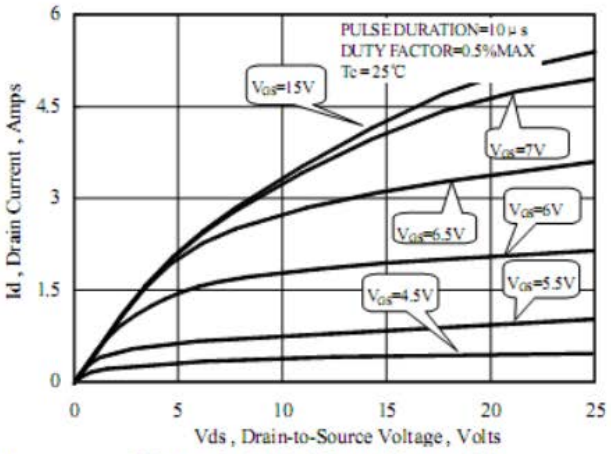


Figure 4 Typical Output Characteristics

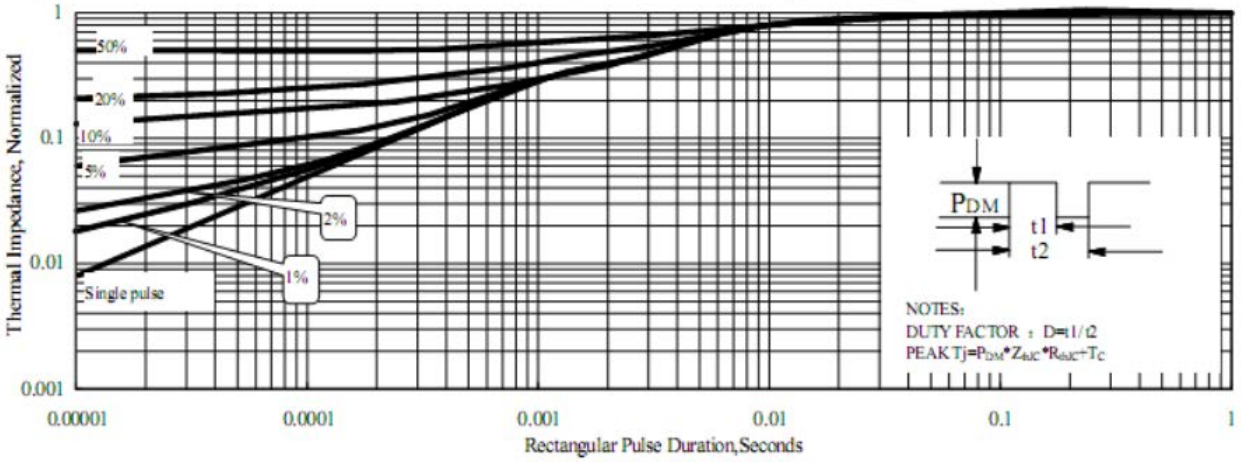


Figure 5 Maximum Effective Thermal Impendance , Junction to Case

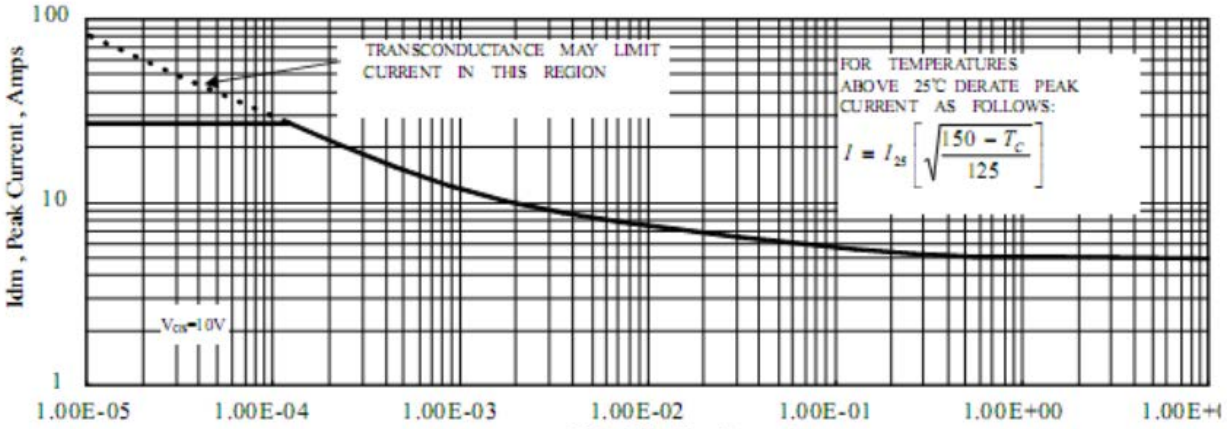


Figure 6 Maximum Peak Current Capability

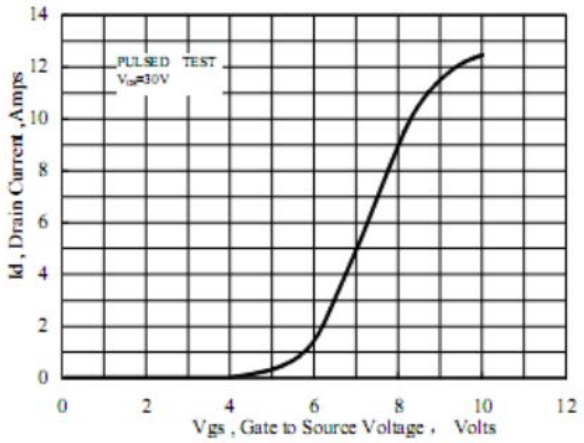


Figure 7 Typical Transfer Characteristics

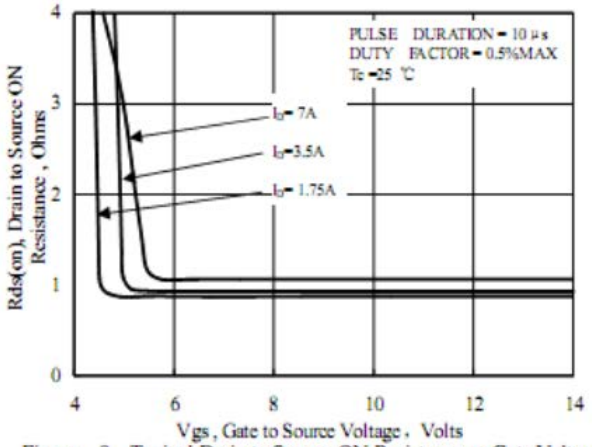


Figure 8 Typical Drain to Source ON Resistance vs Gate Voltage and Drain Current

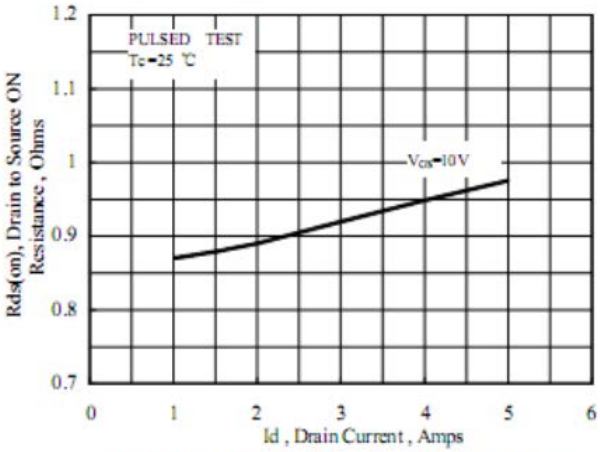


Figure 9 Typical Drain to Source ON Resistance vs Drain Current

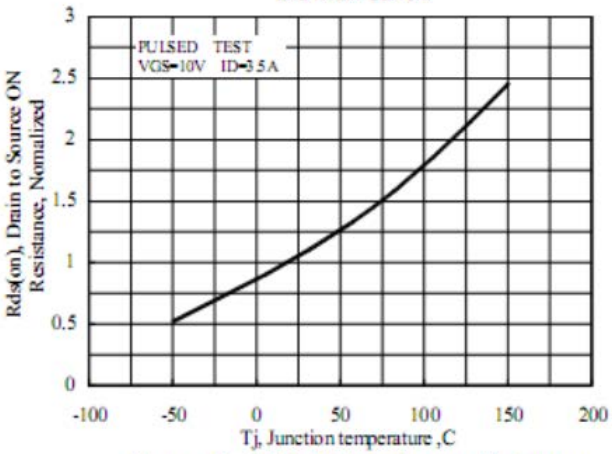


Figure 10 Typical Drian to Source on Resistance vs Junction Temperature

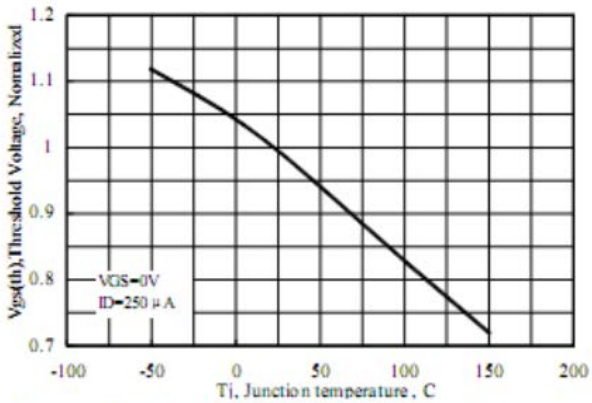


Figure 11 Typical Theshold Voltage vs Junction Temperature

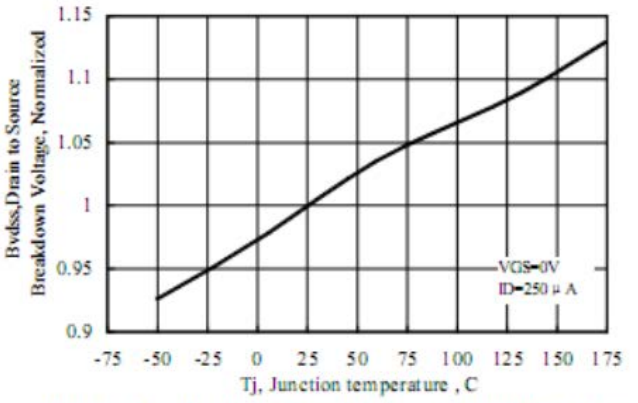


Figure 12 Typical Breakdown Voltage vs Junction Temperature

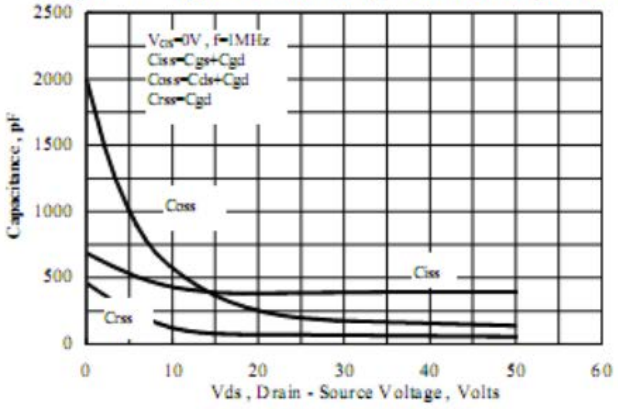


Figure 13 Typical Capacitance vs Drain to Source Voltage

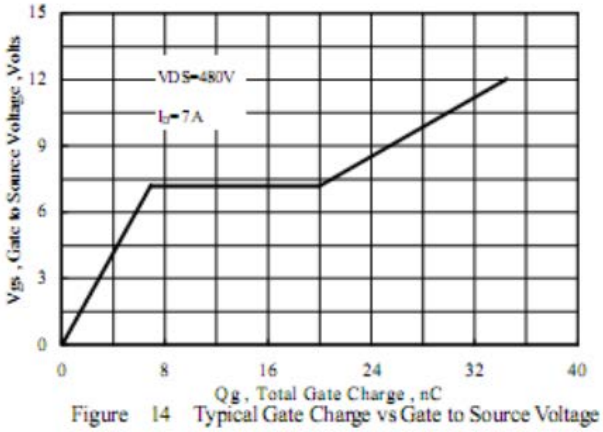


Figure 14 Typical Gate Charge vs Gate to Source Voltage

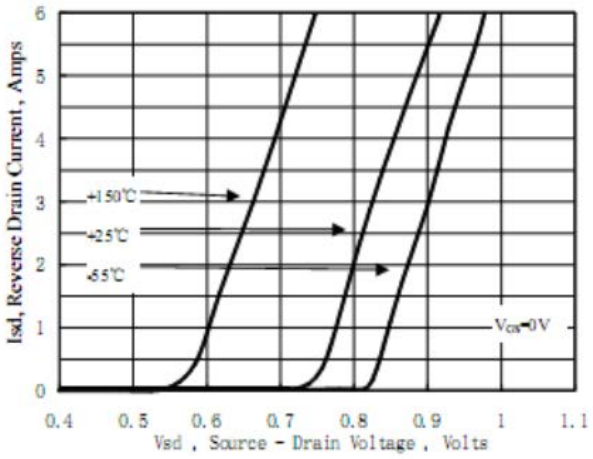


Figure 15 Typical Body Diode Transfer Characteristics

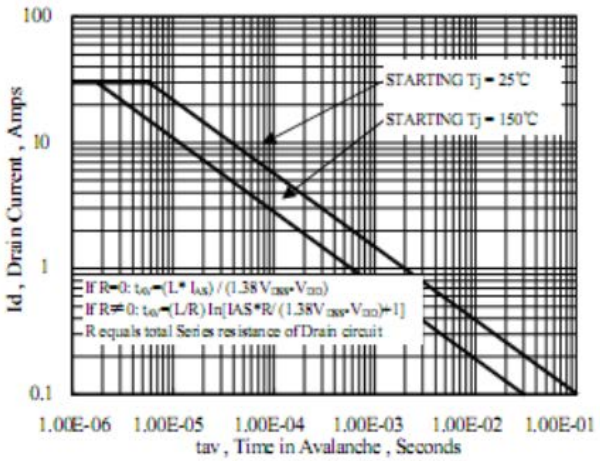
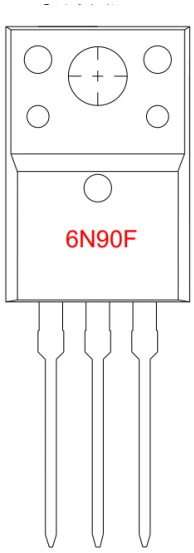


Figure 16 Unclamped Inductive Switching Capability

Marking



Packing Information

Package	Tube (mm)	QTY/Tube (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	QTY/Carton (Kpcs)
TO-220F	535*32.8*7	0.05	560*162*37	1.0	575*210*185	5.0