

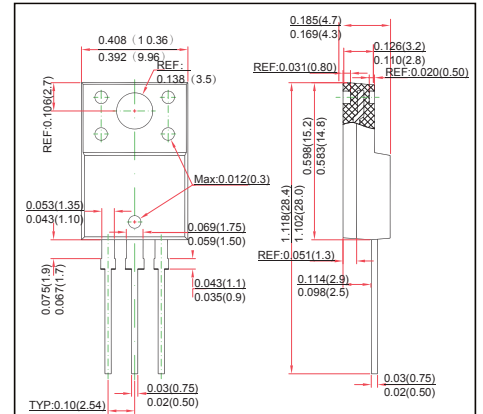
TO-220F Plastic-Encapsulate MOSFETS

FEATURE

- Low Crss
- Fast switching
- Improved dv/dt capability
- 600V N-Channel Power MOSFET

MECHANICAL DATA

- Case style: TO-220F molded plastic
- Mounting position: any



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	± 30	
Continuous Drain Current	I_D	12	A
Single Pulsed Avalanche Energy (note1)	E_{AS}	790	mJ
Power Dissipation	P_D	2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	$^{\circ}C/W$
Operating Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~+150	

MOSFET ELECTRICAL CHARACTERISTICS $T_A=25^{\circ}C$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	600			V
Drain-source diode forward voltage(note2)	V_{SD}	$V_{GS} = 0V, I_S = 12A$			1.4	
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 600V, V_{GS} = 0V$			10	μA
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	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.0		4.0	V
Static drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 6.0A$			0.8	Ω
Dynamic characteristics (note 3)						
Input capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$		1800		pF
Output capacitance	C_{oss}			200		
Reverse transfer capacitance	C_{rfs}			25		
Switching characteristics(note3)						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 325V, R_G = 4.7\Omega, I_D = 12A$		30		ns
Turn-on rise time	t_r			90		
Turn-off delay time	$t_{d(off)}$			160		
Turn-off fall time	t_f			90		

Notes :

1. $L = 10mH, I_{AS} = 12A, V_{DD} = 50V, R_G = 25\Omega, \text{Starting } T_J = 25^{\circ}C.$
2. Pulse Test : Pulse width $\leq 300\mu s,$ duty cycle $\leq 2\%.$
3. These parameters have no way to verify.