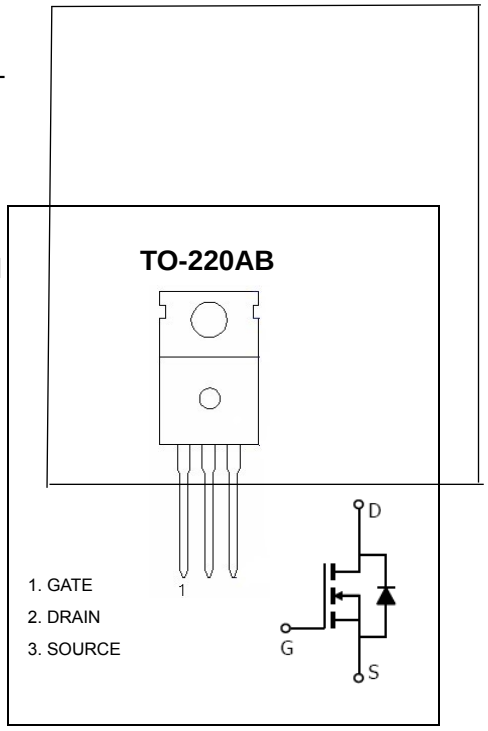
南京集正电子有限公司
NanJing JiZheng Electronics Co.,Ltd

TO-220AB Plastic-Encapsulate MOSFETS

12N60 600V N-Channel Power MOSFET



General Description

This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withistand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficiency switch mode power supply.

FEATURE

- Low C_{rss}
- Fast switching
- Improved dv/dt capability

Maximum ratings (T_a=25℃ 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	℃/W
Operating Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55 ~+150	

Electrical characteristics (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	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 =250μA	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_{rss}			25		
Switching characteristics(note3)						
Turn-on delay time	$t_{d(on)}$	V_{DD}=325V, R_G=4.7Ω, 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}=12 A, V_{DD}=50V, R_G=25Ω,Starting T_J=25℃.
2. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.
3. These parameters have no way to verify.