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

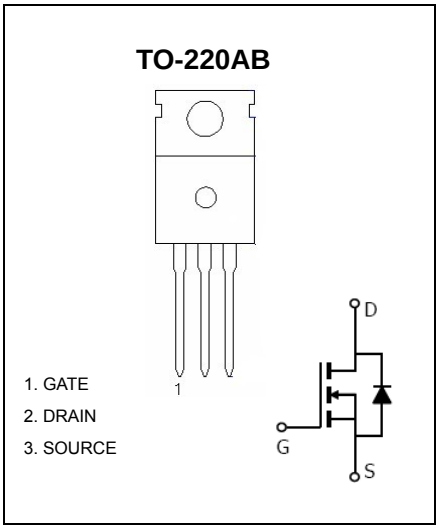
TO-220AB Plastic-Encapsulate MOSFETS

5N60 N-Channel Power MOSFET

Description

This advanced high voltage MOSFET is designed to withstand high energy in the avalanche mode and switch efficiently. This new high energy device also offers a drain-to-source diode with fast recovery time.

Designed for high voltage, high speed switching applications such as power suplies, converters, power motor controls and bridge circuits.



FEATURES

- Low $R_{DS(on)}$
- Lower Capacitances
- Lower Total Gate Charge
- Tighter V_{SD} Specifications
- Avalanche Energy Specified

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	4.5	A
Single Pulsed Avalanche Energy (note1)	E_{AS}	250	mJ
Power Dissipation (note2,T_a=25℃)	P_D	2	W
Maximum Power Dissipation (note3,T_c=25℃)		120	
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-50 ~+150	

Electrical characteristics (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Gate-Body Leakage Current (note 4)	I_{GSS}	V_{DS} =0V, V_{GS} =±30V			±100	nA
Drain-Source Breakdown Voltage	$V_{(BR)\ DSS}$	V_{GS} = 0V, I_D =250μA	600			V
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	2.0		4.0	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =600V, V_{GS} =0V			1	μA
Forward transconductance	g_{fs}	V_{DS} =40V, I_D =2.25A	2.9			S
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =2.25A			2.5	Ω
Input Capacitance	C_{iss}	V_{DS} =25V,V_{GS} =0V, f =1MHz			670	pF
Output Capacitance	C_{oss}				72	
Reverse Transfer Capacitance	C_{rss}				8.5	
Turn-On Delay Time (note 4)	$t_{d(on)}$	V_{DD}=300V,I_D=4.5A, R_G=25Ω			30	ns
Rise Time (note 4)	t_r				90	
Turn-Off Delay Time (note 4)	$t_{d(off)}$				85	
Fall Time (note 4)	t_f				100	
Forward on Voltage (note 4)	V_{SD}	V_{GS} =0V, I_S=4.5A			1.4	V

Notes:

1. E_{AS} condition: T_j=25℃ , V_{DD}=50V,R_G=25Ω,L=16mH,I_{AS}=5A
2. This test is performed with no heat sink at T_a=25℃.
3. This test is performed with infinite heat sink at T_c=25℃.
4. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤2%.