SHENZHEN ICHN ELECTRONICS TECH. CO., LTD

P03N60 TO-220 Small Signal MOSFET

GENERAL DESCRIPTION

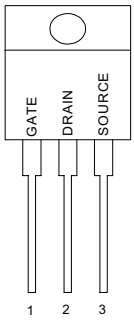
This advanced high voltage MOSFET is designed to withstand high energy in the avalanche mode and switch efficiently. This new high energy device also offers a drain-to-source diode with fast recovery time. Designed for high voltage, high speed switching applications such as power supplies, PWM motor controls and other inductive loads, the avalanche energy capability is specified to eliminate the guesswork in designs where inductive loads are switched and offer additional safety margin against unexpected voltage transients.

FEATURES

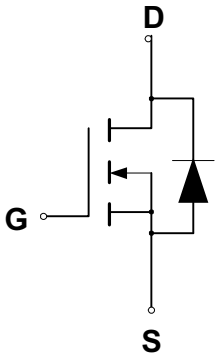
- Avalanche Energy Capability Specified at Elevated Temperature
- Low Stored Gate Charge for Efficient Switching
- Internal Source-to-Drain Diode Designed to Replace External Zener Transient Suppressor – Absorbs High Energy in the Avalanche Mode
- Source-to-Drain Diode Recovery Time Comparable to Discrete Fast Recovery Diode

PIN CONFIGURATION

TO-220
Top View



SYMBOL



N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain to Current — Continuous	I_D	3.0	A
— Pulsed	I_{DM}	14	
Gate-to-Source Voltage — Continue	V_{GS}	±20	V
— Non-repetitive	V_{GSM}	±40	V
Total Power Dissipation	P_D	75	W
Derate above 25℃		0.6	W/℃
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	℃
Single Pulse Drain-to-Source Avalanche Energy — T_J = 25℃	$W_{DSR(1)}$	290	mJ
— T_J = 100℃		46	
Repetitive Pulse Drain-to-Source Avalanche Energy	$W_{DSR(2)}$	7.5	
Thermal Resistance — Junction to Case	θ_{JC}	1.67	℃/W
— Junction to Ambient	θ_{JA}	62.5	
Maximum Lead Temperature for Soldering Purposes, 1/8" from case for 10 seconds	T_L	260	℃

(1) V_{DD} = 50V, I_D = 3.0AA
(2) Pulse Width and frequency is limited by TJ(max) and thermal response