

General Description

The B50T070F N-Channel MOSFET uses advanced technology and designs to provide excellent $R_{DS(ON)}$ with low gate charge.

Application

- High frequency switching mode power supply
- Electronic ballast
- UPS
- Motor Driver

Features

- Low Gate Charge cause lower driving requirements and switching loss
- Low C_{rss} (typical 3.2pF)
- Fast switching
- Improved dv/dt capability
- 100% Avalanche Tested
- Fast Reverse Recovery

Typical Application

V_{DS}	500	V
$R_{DS(ON) MAX}$	1.3	Ω
I_D	7	A

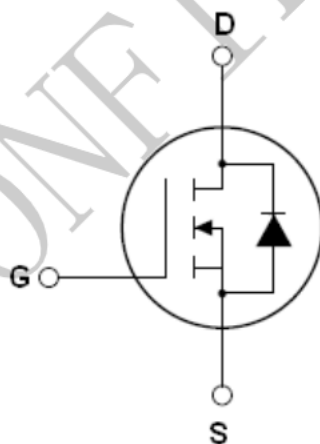
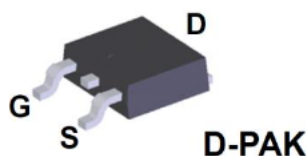


Figure 1. Schematic Diagram

Ordering Information

Part Number	Package	Operating Temperature	Packing Type	Marking
B50T070F	TO-252	-40 °C to 105 °C	Tape & Reel 2,500pcs/Reel	B50T070 XXXXXXKP XXXXWWF

Pin Configuration and Marking Information



B50T070
XXXXXXKP
XXXXWWF

XXXXXXK: Lot Code
WW: Week

Figure 2. Pin Configuration and Marking Information

Pin Definition

Pin No.	Name	Description
1	G	Gate
2	D	Drain
3	S	Source

Absolute Maximum Rating (note 1) (Unless otherwise specified, $T_A=25^{\circ}\text{C}$)

Symbol	Parameters	Range	Unit
V_{DS}	Drain-Source Voltage ($V_{GS}=0V$)	500	V
V_{GS}	Gate-Source Voltage ($V_{DS}=0V$)	± 30	V
$I_{D(DC)}$	Continuous Drain Current at $T_c=25^{\circ}\text{C}$ (note 2)	7.0	A
	Continuous Drain Current at $T_c=100^{\circ}\text{C}$ (note 2)	4.7	A
$I_{DM(pluse)}$	Pulsed drain current (note 3)	28	A
P_D	Maximum Power Dissipation($T_c=25^{\circ}\text{C}$)	56	W
E_{AS}	Single pulse avalanche energy (note 4)	465	mJ
I_{AR}	Avalanche current (note 3)	7.0	A
E_{AR}	Repetitive Avalanche energy, t_{AR} limited by T_{jmax} (note 3)	5.6	mJ
dv/dt	Reverse diode dv/dt , $V_{DS} \leq 400V, I_{SD} < I_D$	4.5	V/ns
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-55 to 150	$^{\circ}\text{C}$
R_{thJC}	Thermal Resistance, Junction-to-Case	2.2	$^{\circ}\text{C}/\text{W}$
R_{thJA}	Thermal Resistance, Junction-to-Ambient	62.5	$^{\circ}\text{C}/\text{W}$

Note 1: Stress beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. Under "recommended operating conditions" the device operation is assured, but some particular parameter may not be achieved. The electrical characteristics table defines the operation range of the device, the electrical characteristics is assured on DC and AC voltage by the test program. For the parameters without minimum and maximum value in the EC table, the typical value defines the operation range, the accuracy is not guaranteed by spec.

Note 2: Limited by maximum junction temperature.

Note 3: Repetitive Rating: Pulse width limited by maximum junction temperature.

Note 4: $T_J=25^{\circ}\text{C}, V_{DD}=50V, V_G=10V, R_G=25\Omega$

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