MSF8N60

N-Channel Enhancement Mode Power MOSFET

Description

The MSF8N60 is a N-channel enhancement-mode MOSFET , providing the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost effectiveness. The ITO-220AB package is universally preferred for all commercial-industrial applications

Features

- Low On Resistance
- Simple Drive Requirement
- Low Gate Charge
- Fast Switching Characteristic
- RoHS compliant package

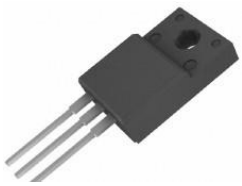
Application

- Open Framed Power Supply
- Adapter
- STB

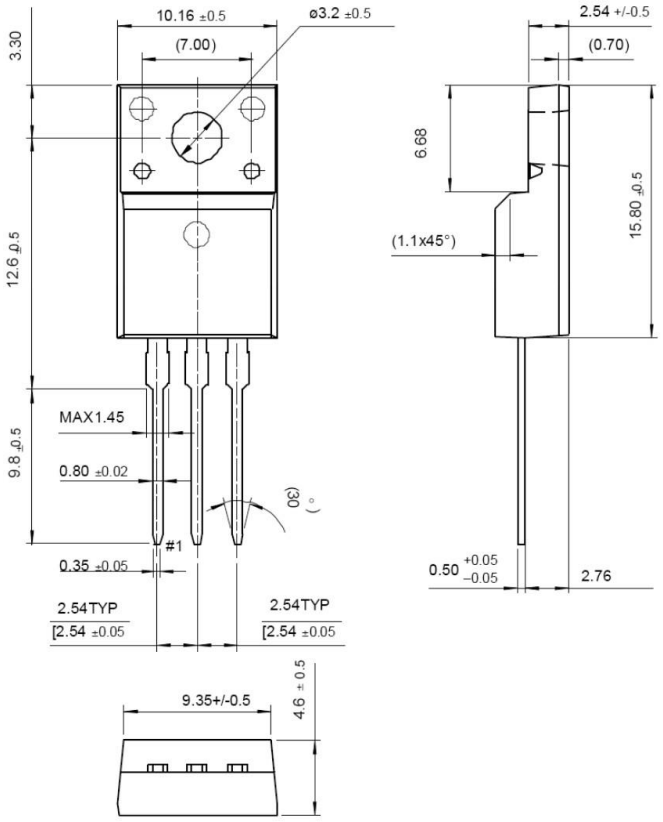
Package type：ITO220-AB

Packing & Order Information

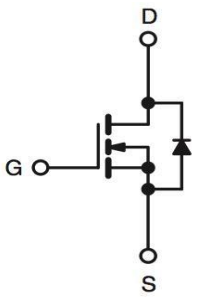
50/Tube ; 1,000/Box



RoHS COMPLIANT



Graphic symbol



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings (Tc=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DSS}	Drain-Source Voltage	600	V
V_{GS}	Gate-Source Voltage	±30	V
I_D	Drain Current -Continuous (TC=25°C)	7.5	A
	Drain Current -Continuous (TC=100°C)	4.5	A
I_{DM}	Drain Current Pulsed	30	A
E_{AS}	Single Pulsed Avalanche Energy	230	mJ
E_{AR}	Repetitive Avalanche Energy	14.7	mJ

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Absolute Maximum Ratings (Tc=25°C unless otherwise noted)			
Symbol	Parameter	Value	Unit
P_D	Power Dissipation (TC = 25 °C)	48	W
	Derating Factor above 25 °C	0.38	W/°C
dv/dt	Peak Diode Recovery dv/dt	4.5	V
T_L	TL Maximum Temperature for Soldering @ Lead at 0.125 in(0.318mm) from case for 10 seconds	300	°C
T_{STG}	Operating Junction Temperature	-55~+150	°C
T_J	Storage Temperature	150	°C

Note:

1.Repetitive rating; pulse width limited by maximum junction temperature.

2. I_{AS}≤7.5A, V_{DD}=50V, L=7.5mH, V_G=10V, starting TJ=+25°C.

3. I_{SD}≤7.5A, dI/dt≤200A/μs, VDD≤BVDSS, starting TJ=+25°C.

Thermal characteristics			
Symbol	Parameter	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case	2.6	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	62.5	

Static Characteristics					
Symbol	Test Conditions	Min	Typ.	Max.	Units
$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	2.0	--	4.0	V
*$R_{DS(ON)}$	V_{GS} = 10 V , I_D = 3.75 A	--	1.0	1.2	Ω
BV_{DSS}	V_{GS} = 0 V , I_D = 250μA	600	--	--	V
$\Delta BV_{DSS}/\Delta T_J$	I_D = 250μA, Referenced to 25°C	--	0.65	--	V/°C
I_{DSS}	V_{DS} = 600 V , V_{GS} = 0 V V_{DS} = 480 V , T_C= 125°C	--	--	1 10	uA
I_{GSS}	V_{GS} = ±30	--	--	±100	nA

Dynamic Characteristics					
Symbol	Test Conditions	Min	Typ.	Max.	Units
Q_g	V_{DD} = 300 V,I_D = 6 A, V_{GS} = 10 V	--	31.3	--	nC
Q_{gs}		--	6.9	--	nC
Q_{gd}		--	14	--	nC
$t_{d(on)}$	V_{DD} = 300 V, I_D = 6 A, R_G = 10 Ω , V_{GS} = 10 V	--	14.2	--	ns
t_r		--	11.8	--	ns
$t_{d(off)}$		--	40.1	--	ns
tf		--	18.8	--	ns

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Dynamic Characteristics					
Symbol	Test Conditions	Min	Typ.	Max.	Units
C_{ISS}	V_{DS} = 25 V, V_{GS} = 0 V, f = 1.0MHz	--	1482	--	pF
C_{OSS}		--	121.7	--	pF
C_{RSS}		--	14	--	pF

Source-Drain Diode Characteristics					
Symbol	Test Conditions	Min	Typ.	Max.	Units
I_S	V_D = V_G = 0 V, V_S = 1.3 V	--	--	7.5	A
I_{SM}		--	--	30	
V_{SD}	I_S = 7.5 A , V_{GS} = 0 V	--	--	1.5	V
t_{rr}	I_F = 6 A ,V_{GS} = 0 V , dIF/dt=100A/μs	--	504.9	--	ns
Q_{rr}		--	47.59	--	nC

*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

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