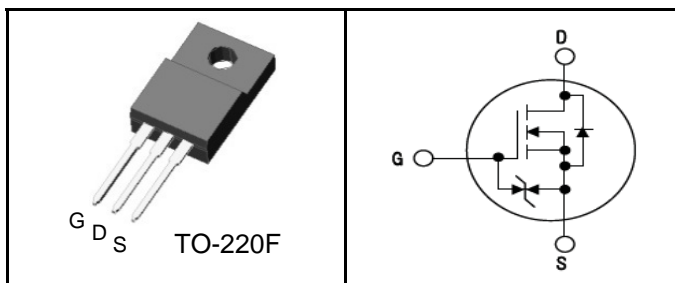


650V N-Channel Super Junction MOSFET

Features

- $V_{DSS}=650\text{ V}$, $I_D=4.8\text{ A}$
- $R_{DS(on)}:1.0\ \Omega\ (\text{Max})\ @\ V_{GS}=10\text{V}$
- Very Low FOM ($R_{DS(on)} \times Q_g$)
- Extremely low switching loss
- Excellent stability and uniformity
- 100% Avalanche Tested
- Built-in ESD Diode



Application

- Switch Mode Power Supply (SMPS)
- Uninterruptible Power Supply (UPS)
- Power Factor Correction (PFC)
- TV power & LED Lighting Power
- AC to DC Converters
- Telecom



Device Marking and Package Information

Ordering Code	Package	Marking
MPSA65M1K0B	TO-220F	MP65M1K0B

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Value	Unit
V_{DSS}	Drain-Source Voltage	650	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current - Continuous ($T_C = 25^\circ\text{C}$)	4.8	A
	Drain Current - Continuous ($T_C = 100^\circ\text{C}$)	3.0	A
$I_{DM}^{(1)}$	Drain Current - Pulsed	14.4	A
$E_{AS}^{(2)}$	Single Pulsed Avalanche Energy	43	mJ
I_{AR}	Avalanche Current	1.0	A
dv/dt	MOSFET dv/dt ruggedness, $V_{DS}=0\dots 400\text{V}$	50	V/ns
dv/dt	Reverse diode dv/dt, $V_{DS}=0\dots 400\text{V}$, $I_{DS}\leq I_D$	15	V/ns
P_D	Power Dissipation ($T_C = 25^\circ\text{C}$)	23	W
$V_{ESD(G-S)}$	Gate source ESD(HBM-C=100pF, R=1.5K Ω)	2000	V
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to +150	$^\circ\text{C}$

Thermal Resistance Characteristics

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case, Max.	5.5	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient, Max.	80	$^\circ\text{C/W}$