

**isc N-Channel MOSFET Transistor**
**FCP125N65S3**
**• FEATURES**

- Drain Source Voltage-  
:  $V_{DSS} = 650V(\text{Min})$
- Static Drain-Source On-Resistance  
:  $R_{DS(on)} = 125m\ \Omega (\text{Max})$
- Fast Switching
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**• APPLICATIONS**

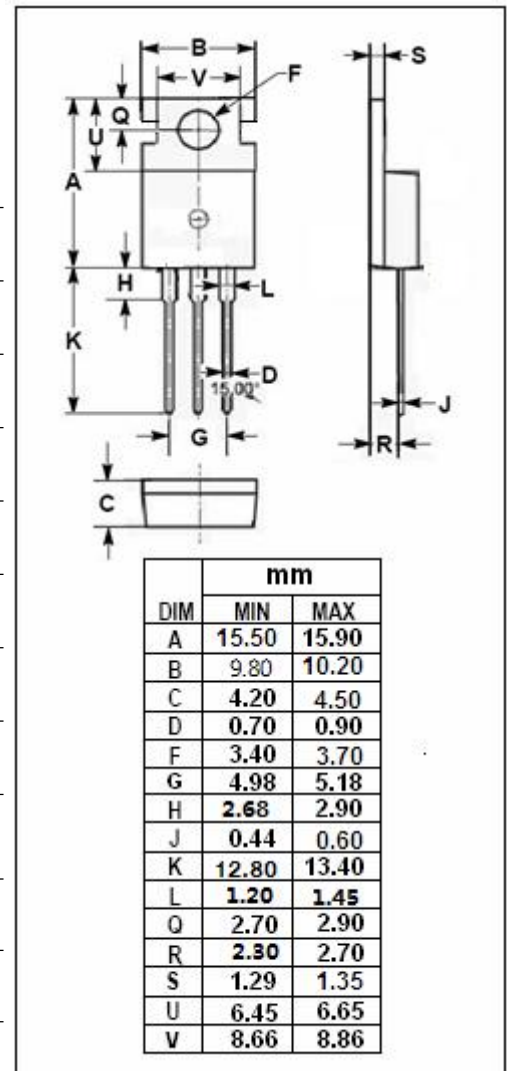
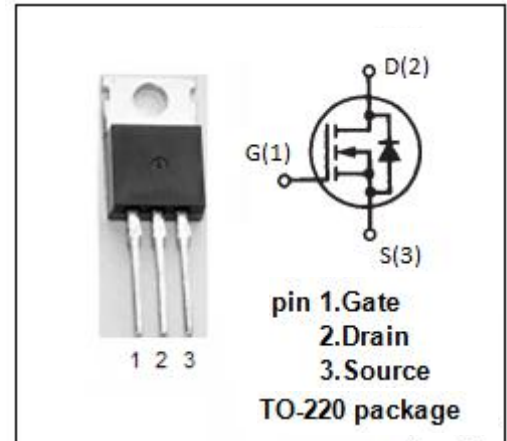
- Switch-Mode and Resonant-Mode Power Supplies
- DC-DC Converters
- AC and DC Motor Drives

**• ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )**

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DSS}$	Drain-Source Voltage	650	V
$V_{GS}$	Gate-Source Voltage-Continuous	$\pm 30$	V
$I_D$	Drain Current-Continuous	24	A
$I_{DM}$	Drain Current-Single Plused	60	A
$P_D$	Total Dissipation @ $T_c=25^\circ\text{C}$	181	W
$T_j$	Max. Operating Junction Temperature	-55~150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~150	$^\circ\text{C}$

**• THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	0.69	$^\circ\text{C}/\text{W}$



## isc N-Channel MOSFET Transistor

## FCP125N65S3

## • ELECTRICAL CHARACTERISTICS

T<sub>c</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYPE	MAX	UNIT
V <sub>(BR)DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> = 0; I <sub>D</sub> =1mA	650			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> ; I <sub>D</sub> = 590uA	2.5		4.5	V
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> = 10V; I <sub>D</sub> = 12A			125	mΩ
I <sub>GSS</sub>	Gate-Body Leakage Current	V <sub>GS</sub> = ±30V; V <sub>DS</sub> = 0			±100	nA
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =650V; V <sub>GS</sub> = 0			1	μA
V <sub>SD</sub>	Diode Forward On-voltage	I <sub>F</sub> = 12A; V <sub>GS</sub> = 0			1.2	V

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