

**isc N-Channel MOSFET Transistor****TK32E12N1, ITK32E12N1****• FEATURES**

- Low drain-source on-resistance:  
 $R_{DS(on)} \leq 13.8\text{m}\Omega$ . ( $V_{GS} = 10\text{ V}$ )
- Enhancement mode:  
 $V_{th} = 2.0\text{ to }4.0\text{ V}$  ( $V_{DS} = 10\text{ V}$ ,  $I_D = 0.5\text{ mA}$ )
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**• DESCRIPTION**

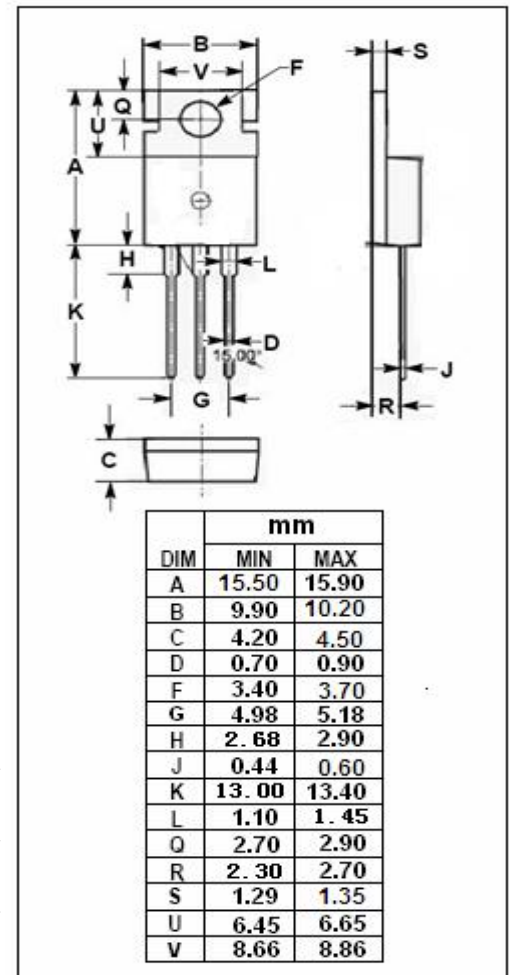
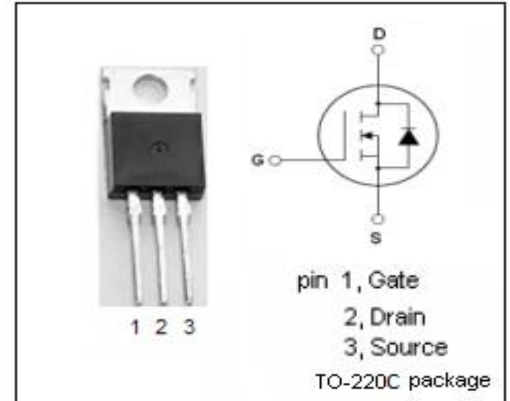
- Switching Voltage Regulators

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DS}$	Drain-Source Voltage	120	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Drain Current-Continuous	60	A
$I_{DM}$	Drain Current-Single Pulsed	110	A
$P_D$	Total Dissipation @ $T_c = 25^\circ\text{C}$	98	W
$T_j$	Max. Operating Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~150	$^\circ\text{C}$

**• THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th(ch-c)}$	Channel-to-case thermal resistance	1.27	$^\circ\text{C/W}$
$R_{th(ch-a)}$	Channel-to-ambient thermal resistance	83.3	$^\circ\text{C/W}$



**isc N-Channel MOSFET Transistor****TK32E12N1, ITK32E12N1****ELECTRICAL CHARACTERISTICS****T<sub>C</sub>=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V; I <sub>D</sub> =10mA	120			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =10V; I <sub>D</sub> =0.5mA	2.0		4.0	V
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> =10V; I <sub>D</sub> =16A			13.8	mΩ
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> = ±20V; V <sub>DS</sub> = 0V			±0.1	μA
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =120V; V <sub>GS</sub> = 0V			10	μA
V <sub>SDF</sub>	Diode forward voltage	I <sub>DR</sub> =32A, V <sub>GS</sub> = 0 V			1.2	V

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