

**isc N-Channel MOSFET Transistor**

**TK31E60W, ITK31E60W**

**• FEATURES**

- Low drain-source on-resistance:  
 $R_{DS(on)} \leq 0.088\Omega$ .
- Enhancement mode:  
 $V_{th} = 2.7$  to  $3.7V$  ( $V_{DS} = 10V, I_D = 1.5mA$ )
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**• DESCRIPTION**

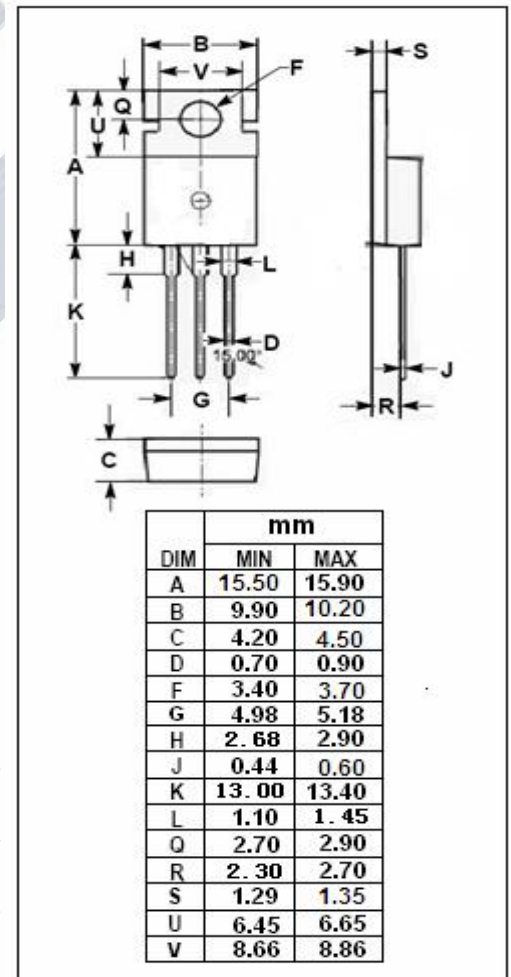
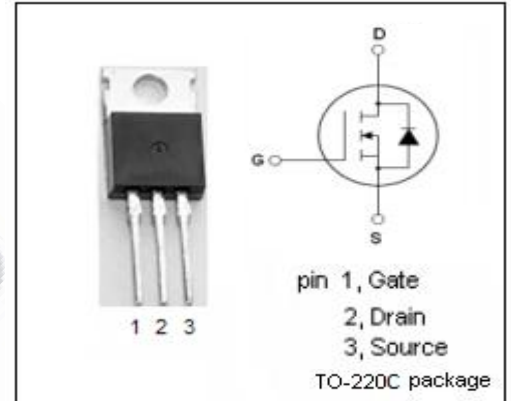
- Switching Voltage Regulators

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DSS}$	Drain-Source Voltage	600	V
$V_{GS}$	Gate-Source Voltage	$\pm 30$	V
$I_D$	Drain Current-Continuous	30.8	A
$I_{DM}$	Drain Current-Single Pulsed	123	A
$P_D$	Total Dissipation @ $T_c = 25^\circ C$	230	W
$T_j$	Max. Operating Junction Temperature	150	$^\circ C$
$T_{stg}$	Storage Temperature	-55~150	$^\circ C$

**• THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th(ch-c)}$	Channel-to-case thermal resistance	0.543	$^\circ C/W$
$R_{th(ch-a)}$	Channel-to-ambient thermal resistance	83.3	$^\circ C/W$



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**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	600			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =10V; I <sub>D</sub> =1.5mA	2.7		3.7	V
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> =10V; I <sub>D</sub> =15.4A			88	mΩ
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> = ±30V; V <sub>DS</sub> = 0V			±1	μA
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =600V; V <sub>GS</sub> = 0V			10	μA
V <sub>SDF</sub>	Diode forward voltage	I <sub>DR</sub> =30.8A, V <sub>GS</sub> = 0 V			1.7	V