

isc N-Channel MOSFET Transistor

TK12A50W,ITK12A50W

• FEATURES

- Low drain-source on-resistance: $R_{DS(ON)} = 0.3\Omega$
- Easy to control Gate switching
- Enhancement mode: $V_{th} = 2.7$ to 3.7 V ($V_{DS} = 10$ V, $I_D = 0.6$ mA)
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

• DESCRIPTION

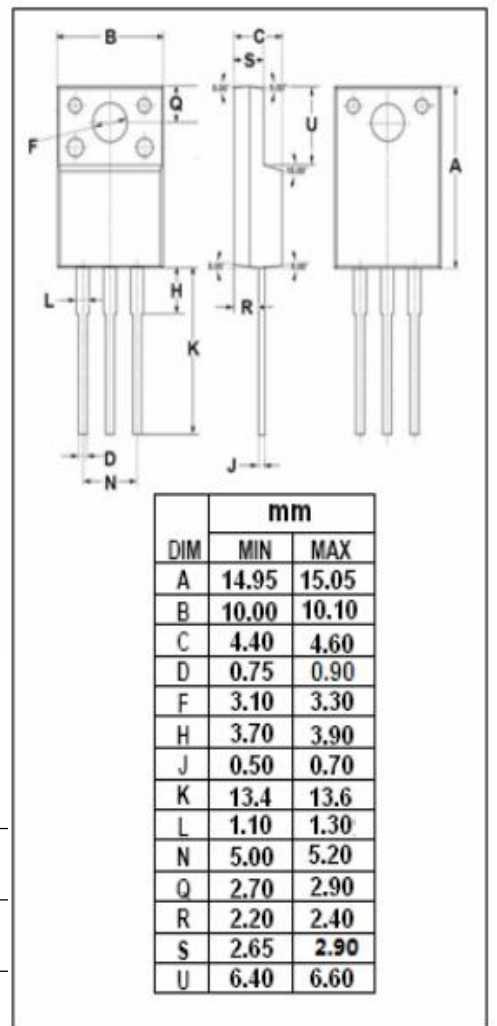
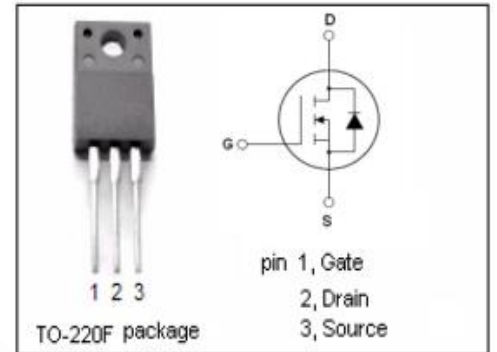
- Switching Voltage Regulators

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage	500	V
V_{GS}	Gate-Source Voltage	± 30	V
I_D	Drain Current-Continuous	11.5	A
I_{DM}	Drain Current-Single Pulsed	46	A
P_D	Total Dissipation @ $T_c = 25^\circ\text{C}$	35	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	3.57	$^\circ\text{C/W}$
$R_{th(ch-a)}$	Channel-to-ambient thermal resistance	62.5	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V; I _D = 10mA	500			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = 10V; I _D = 0.6mA	2.7		3.7	V
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} = 10V; I _D = 5.8A			300	mΩ
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±30V; V _{DS} = 0V			±1	μA
I _{DSS}	Drain-Source Leakage Current	V _{DS} = 500V; V _{GS} = 0V			10	μA
V _{SDF}	Diode forward voltage	I _{DR} = 11.5 A, V _{GS} = 0 V			1.7	V