

iscN-Channel MOSFET Transistor

TK12A53D, ITK12A53D

• FEATURES

- Low drain-source on-resistance:
 $R_{DS(ON)} = 0.5\Omega$ (typ.)
- Enhancement mode:
 $V_{th} = 2.0$ to $4.0V$ ($V_{DS} = 10V$, $I_D = 1.0mA$)
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

• DESCRIPTION

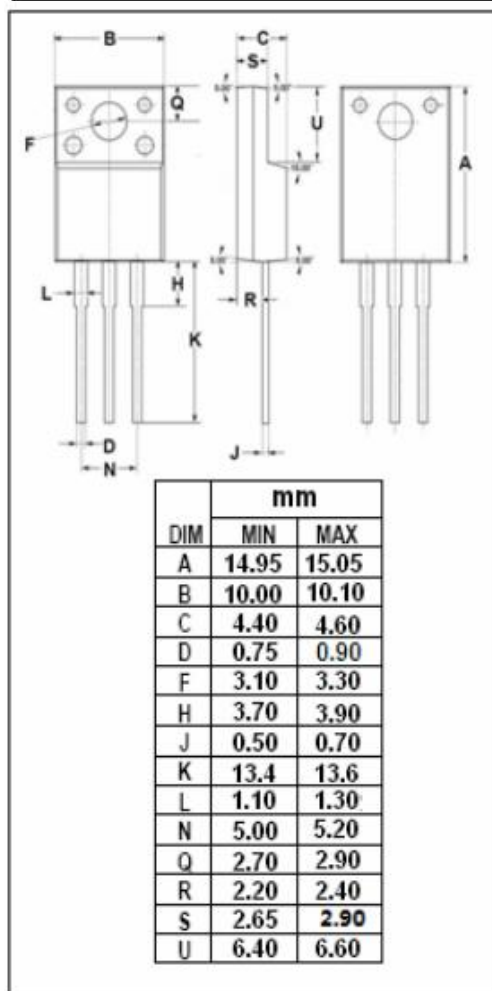
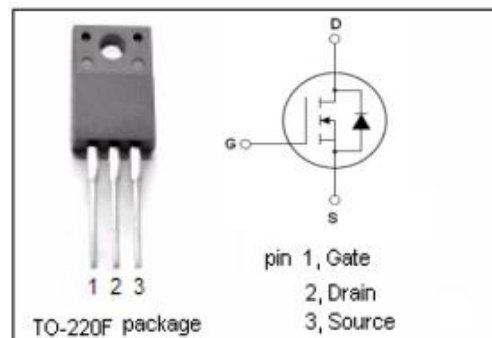
- Switching Voltage Regulators

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{DS}	Drain-Source Voltage	525	V
V_{GS}	Gate-Source Voltage	± 30	V
I_D	Drain Current-Continuous	12	A
I_{DM}	Drain Current-Single Pulsed	48	A
P_D	Total Dissipation @ $T_c = 25^\circ C$	45	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	2.78	$^\circ C/W$
$R_{th(ch-a)}$	Channel-to-ambient thermal resistance	62.5	$^\circ C/W$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
BV_{DS}	Drain-Source Breakdown Voltage	$V_{GS}=0V; I_D=10mA$	525			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=10V; I_D=1.0mA$	2.0		4.0	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V; I_D=6A$		500	580	$m\Omega$
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 30V; V_{DS}=0V$			± 1	μA
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=525V; V_{GS}=0V$			10	μA
V_{SDF}	Diode forward voltage	$I_{DR}=12A, V_{GS}=0V$			1.7	V

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