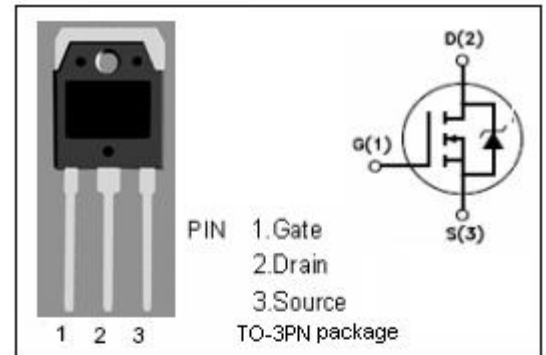


**isc N-Channel MOSFET Transistor**
**2SK1940-01**
**DESCRIPTION**

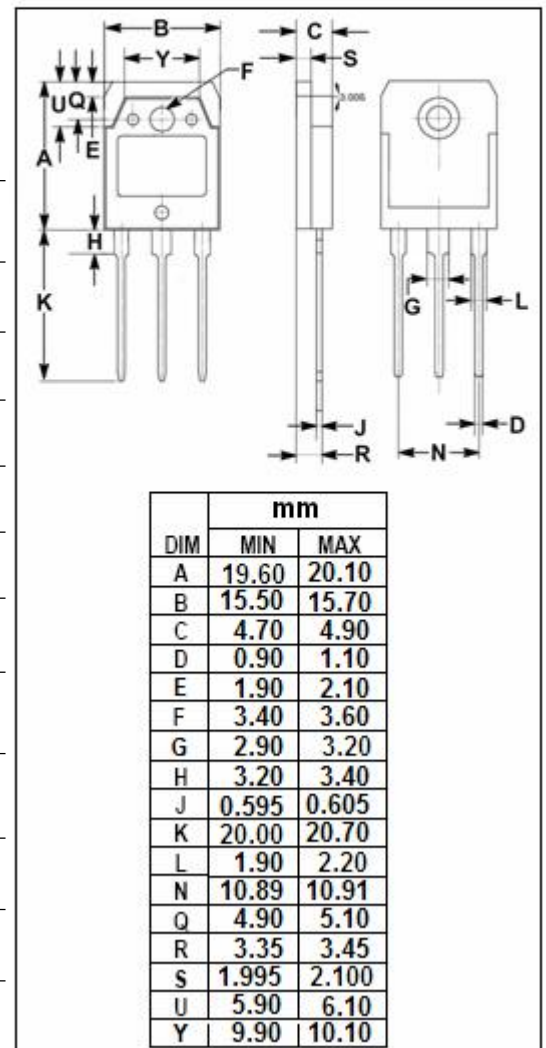
- Drain Current  $-I_D = 12A @ T_C = 25^\circ C$
- Drain Source Voltage-  
:  $V_{DSS} = 600V(\text{Min})$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Switching regulator
- UPS
- DC-DC converters
- General purpose power amplifier


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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DSS}$	Drain-Source Voltage ( $V_{GS}=0$ )	600	V
$V_{GS}$	Gate-Source Voltage	$\pm 30$	V
$I_D$	Drain Current-continuous@ $T_C = 25^\circ C$	12	A
$I_{DM}$	Drain Current-Single Pulsed	48	A
$P_{tot}$	Total Dissipation@ $T_C = 25^\circ C$	125	W
$T_j$	Max. Operating Junction Temperature	150	$^\circ C$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ C$


**• THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	1.25	$^\circ C/W$
$R_{th j-a}$	Thermal Resistance, Junction to Ambient	35	$^\circ C/W$

## isc N-Channel Mosfet Transistor

## 2SK1940-01

• ELECTRICAL CHARACTERISTICS (T<sub>c</sub>=25°C)

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	600			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> ; I <sub>D</sub> =1mA	2.5		3.5	V
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> = 10V; I <sub>D</sub> = 6A			0.75	Ω
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> = 600V; V <sub>GS</sub> = 0		10	500	μA
V <sub>SD</sub>	Forward On-Voltage	I <sub>S</sub> =24A; V <sub>GS</sub> =0			1.58	V
G <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> = 25V; I <sub>D</sub> =6A	6.0			S
t <sub>r</sub>	Rise time	V <sub>GS</sub> =10V; I <sub>D</sub> =6A; V <sub>DD</sub> =300V; R <sub>L</sub> =10Ω		60	90	ns
t <sub>on</sub>	Turn-on time			30	45	
t <sub>f</sub>	Fall time			80	120	
t <sub>off</sub>	Turn-off time			140	210	

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