

#### **INCHANGE SEMICONDUCTOR**

## isc N-Channel MOSFET Transistor

## TK9J90E

 DESCRIPTION • Drain Current I<sub>D</sub>= 9A@ T<sub>C</sub>=25℃ D(2) · Drain Source Voltage-: V<sub>DSS</sub>= 900V(Min) · Fast Switching Speed 100% avalanche tested · Minimum Lot-to-Lot variations for robust device PIN 1.Gate 2.Drain performance and reliable operation 3.Source TO-3PN package 2 3 1 APPLICATIONS B C S · Switching voltage regulators ABSOLUTE MAXIMUM RATINGS(Tc=25°C) Ó SYMBOL PARAMETER VALUE UNIT Ġ Drain-Source Voltage (V<sub>GS</sub>=0) V VDSS 900 V<sub>GS</sub> Gate-Source Voltage  $\pm 30$ V R Drain Current-continuous@ Tc=25°C 9  $I_D$ А mm DIM MIN MAX 20.10 A 19.60 **Pulse Drain Current** I<sub>D(puls)</sub> 27 А 15.50 В 15.70 C 4.70 4.90 D 0.90  $\mathbf{P}_{\text{tot}}$ Total Dissipation@Tc=25°C 250 W Ε 1.90 F 3.40Tj Max. Operating Junction Temperature 150 °C G 2.90 Н 3.200.595 0.605-55~150 °C T<sub>stg</sub> Storage Temperature Range K 20.00 20.70 1.90 Ν 10.89 4.90 Q THERMAL CHARACTERISTICS R 3.351.995 SYMBOL MAX s 2.100 PARAMETER UNIT 5.90 U Y 9.90 °C/W 0.5 Rth j-c Thermal Resistance, Junction to Case

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#### • ELECTRICAL CHARACTERISTICS (Tc=25°C)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYPE	МАХ	UNIT
V <sub>(BR)DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> = 0; I <sub>D</sub> =10mA	900			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	$V_{DS}$ = $V_{GS}$ ; I <sub>D</sub> =0.9mA	2.5		4.0	V
V <sub>SD</sub>	Diode Forward On-Voltage	I <sub>S</sub> =9A ;V <sub>GS</sub> = 0			1.7	V
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> = 10V; I <sub>D</sub> =4.5A			1.3	Ω
I <sub>GSS</sub>	Gate-Body Leakage Current	V <sub>GS</sub> = ±30V;V <sub>DS</sub> = 0			±1	μA
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> = 720V; V <sub>GS</sub> = 0			10	μA

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