

isc N-Channel Mosfet Transistor

IRF523

• FEATURES

- Low $R_{DS(on)}$
- V_{GS} Rated at $\pm 20V$
- Silicon Gate for Fast Switching Speed
- Rugged
- Low Drive Requirements

• DESCRIPTION

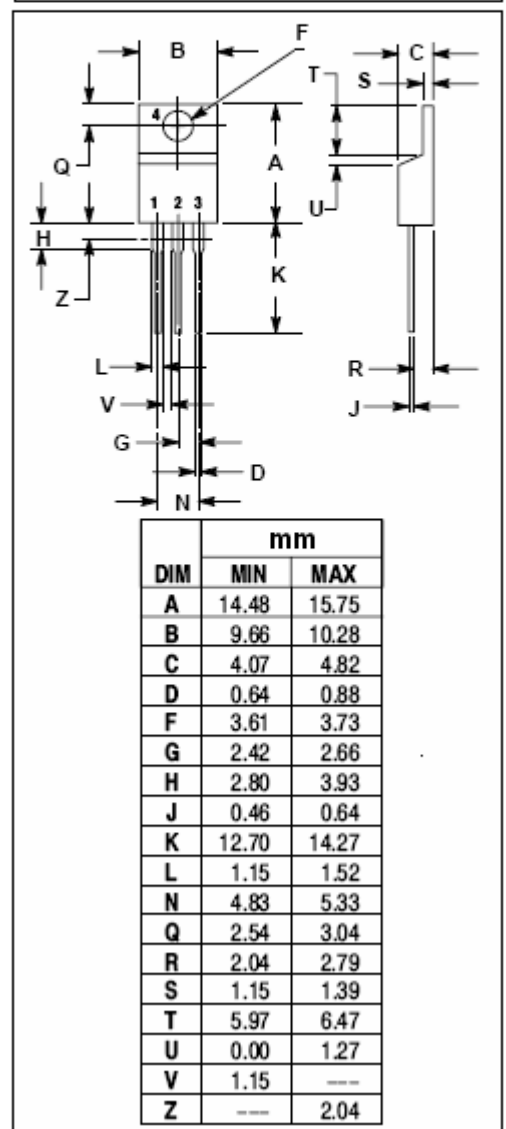
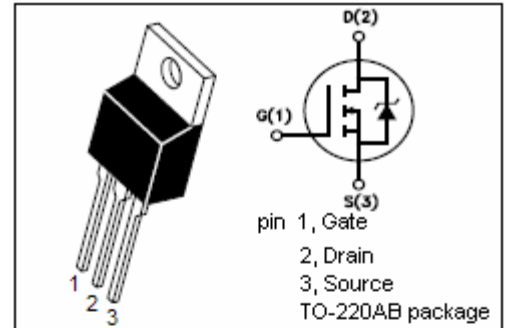
- Designed especially for high voltage, high speed applications, such as off-line switching power supplies, UPS, AC and DC motor controls, relay and solenoid drivers.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage	80	V
V_{GS}	Gate-Source Voltage-Continuous	± 20	V
I_D	Drain Current-Continuous	8	A
I_{DM}	Drain Current-Single Plused	32	A
P_D	Total Dissipation @ $T_C=25^\circ C$	60	W
T_j	Max. Operating Junction Temperature	-55~175	$^\circ C$
T_{stg}	Storage Temperature	-55~175	$^\circ C$

• THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	2.5	$^\circ C/W$
$R_{th j-a}$	Thermal Resistance, Junction to Ambient	80	$^\circ C/W$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0; I_D=0.25\text{mA}$	80			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}; I_D=0.25\text{mA}$	2		4	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10\text{V}; I_D=5.6\text{A}$			0.36	Ω
I_{GSS}	Gate-Body Leakage Current	$V_{GS}= \pm 20\text{V}; V_{DS}=0$			± 500	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=80\text{V}; V_{GS}=0$			250	μA
V_{SD}	Forward On-Voltage	$I_S=9.2\text{A}; V_{GS}=0$			2.5	V
C_{iss}	Input Capacitance	$V_{DS}=25\text{V}, V_{GS}=0\text{V},$ $F=1.0\text{MHz}$		350		pF
C_{oss}	Output Capacitance			130		pF
C_{rss}	Reverse Transfer Capacitance			25		pF

• SWITCHING CHARACTERISTICS ($T_C=25^\circ\text{C}$)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$T_d(on)$	Turn-on Delay Time	$V_{DD}=50\text{V}, I_D=9.2\text{A}$ $V_{GS}=10\text{V}, R_{GEN}=18\Omega$ $R_{GS}=18\Omega$		9	13	ns
T_r	Rise Time			30	45	ns
$T_d(off)$	Turn-off Delay Time			18	29	ns
T_f	Fall Time			20	30	ns