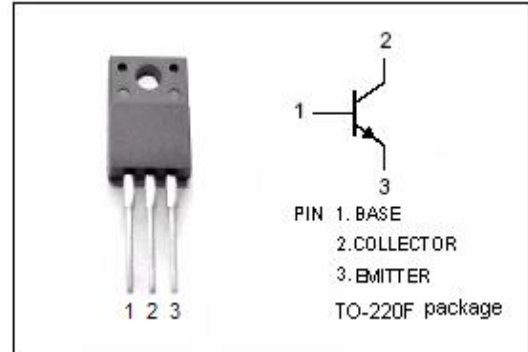


**isc Silicon NPN Power Transistor**
**2SC3748**
**DESCRIPTION**

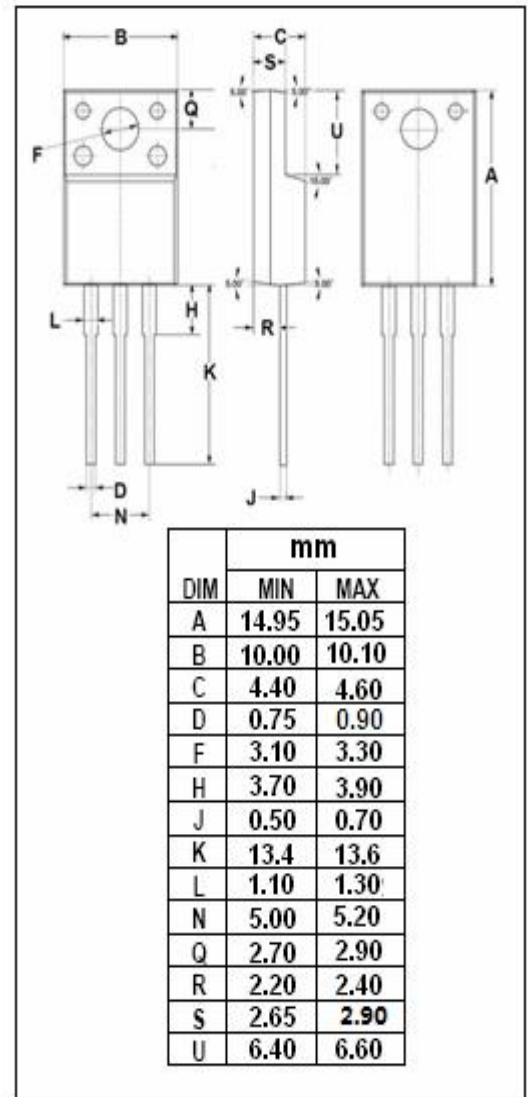
- Good Linearity of  $h_{FE}$
- High Switching Speed
- Low Collector Saturation Voltage
- Complement to Type 2SA1471
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Inductance, lamp drivers
- Inverters, converters
- Power amplifiers
- High-speed switching applications.


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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	80	V
$V_{CEO}$	Collector-Emitter Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	10	A
$I_{CM}$	Collector Current-Pulse	12	A
$P_C$	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	30	W
	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	2.0	
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~150	$^\circ\text{C}$



**isc Silicon NPN Power Transistor**
**2SC3748**
**ELECTRICAL CHARACTERISTICS**
**T<sub>j</sub>=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 1mA; R <sub>BE</sub> = ∞	60			V
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 1mA; I <sub>E</sub> = 0	80			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 1mA; I <sub>C</sub> = 0	5			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 5A; I <sub>B</sub> = 0.25A			0.4	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 40V; I <sub>E</sub> = 0			100	μA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 4V; I <sub>C</sub> = 0			100	μA
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 1A ; V <sub>CE</sub> = 2V	70		280	
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 1A ; V <sub>CE</sub> = 5V		100		MHz

**Switching times**

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = 5A , I <sub>B1</sub> = -I <sub>B2</sub> = 0.25A; R <sub>L</sub> = 4 Ω ; V <sub>CC</sub> = 20V		0.1		μs
t <sub>stg</sub>	Storage Time			0.5		μs
t <sub>f</sub>	Fall Time			0.1		μs

**◆ h<sub>FE</sub> Classifications**

Q	R	S
70-140	100-200	140-280

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