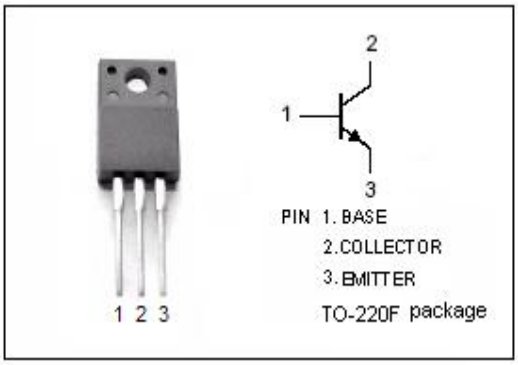
isc Silicon NPN Power Transistor — 2SC3747

DESCRIPTION

- Good Linearity of h_{FE}
- High Switching Speed
- Low Collector Saturation Voltage
- Complement to Type 2SA1470
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

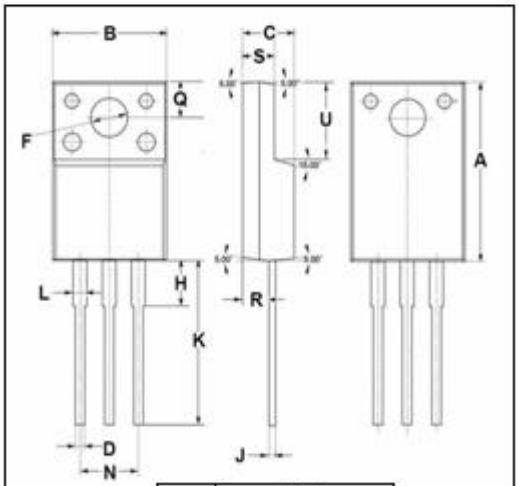


APPLICATIONS

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

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

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	7	A
I_{CM}	Collector Current-Pulse	10	A
P_C	Collector Power Dissipation @T_C=25℃	25	W
	Collector Power Dissipation @T_a=25℃	2.0	
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55~150	℃



DIM	mm MIN	mm MAX
A	14.95	15.05
B	10.00	10.10
C	4.40	4.60
D	0.75	0.90
F	3.10	3.30
H	3.70	3.90
J	0.50	0.70
K	13.4	13.6
L	1.10	1.30
N	5.00	5.20
Q	2.70	2.90
R	2.20	2.40
S	2.65	2.90
U	6.40	6.60

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ELECTRICAL CHARACTERISTICS

Tj=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C= 1mA; R_{BE}= ∞	60			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C= 1mA; I_E= 0	80			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E= 1mA; I_C= 0	5			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 3.5A; I_B= 0.175A			0.4	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 40V ; I_E= 0			100	μA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 4V; I_C= 0			100	μA
h_{FE}	DC Current Gain	I_C= 1A ; V_{CE}= 2V	70		280	
f_T	Current-Gain—Bandwidth Product	I_C= 1A ; V_{CE}= 5V		100		MHz
Switching times						
t_{on}	Turn-on Time	I_C= 3A , I_{B1}= -I_{B2}= 0.15A; R_L= 6.67Ω ; V_{CC}≒ 20V		0.1		μs
t_{stg}	Storage Time			0.5		μs
t_f	Fall Time			0.1		μs

◆ **h_{FE} Classifications**

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