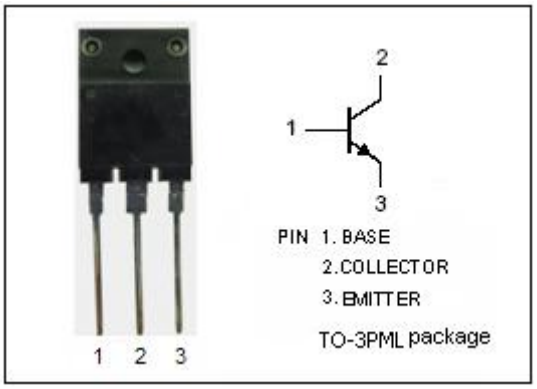
isc Silicon NPN Power Transistor — 2SC3947

DESCRIPTION

- High Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 500V(Min)
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

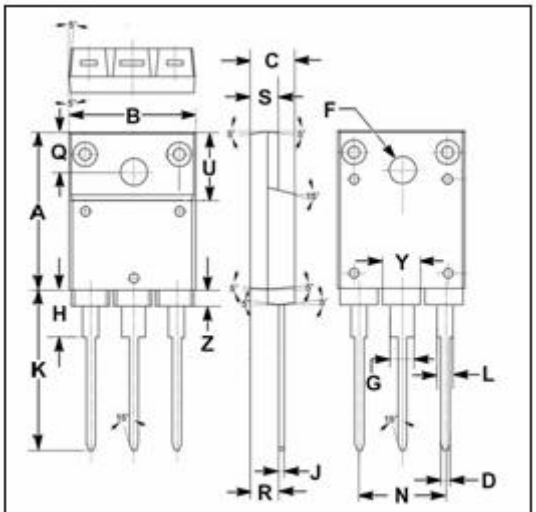


APPLICATIONS

- Designed for switching regulator applications.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	850	V
V_{CEO}	Collector-Emitter Voltage	500	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	5	A
I_{CP}	Collector Current-Peak	8	A
I_B	Base Current-Continuous	2	A
P_C	Collector Power Dissipation @ T_C=25℃	70	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃



DIM	mm MIN	mm MAX
A	19.90	20.10
B	15.75	16.10
C	5.50	5.70
D	0.90	1.10
F	3.30	3.50
G	2.90	3.20
H	5.90	6.10
J	0.595	0.70
K	21.10	22.50
L	1.90	2.25
N	10.80	11.00
Q	4.90	5.10
R	3.75	3.95
S	3.20	3.60
U	9.90	10.10
Y	4.20	4.90
Z	1.90	2.10

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C= 1mA; I_E= 0	850			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C= 10mA; R_{BE}= ∞	500			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E= 1m A; I_C= 0	7			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 2.5A; I_B= 0.5A			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 2.5A; I_B= 0.5A			1.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 800V; I_E= 0; V_{CB}= 800V; I_E= 0; T_C= 100℃			0.1 1.0	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 6V; I_C= 0			0.1	mA
h_{FE}	DC current gain	I_C= 2.5A; V_{CE}= 5V	10		30	
f_T	Current-Gain—Bandwidth Product	I_C= 0.5A; V_{CE}= 10V		20		MHz
C_{OB}	Output Capacitance	I_E= 0; V_{CB}= 10V; f_{test}= 1.0MHz		70		pF
Switching times						
t_r	Rise Time	I_C= 2.5A, I_{B1}= -I_{B2}= 1A; V_{CC}= 250V			0.5	μs
t_{stg}	Storage Time				3.0	μs
t_f	Fall Time				0.3	μs

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