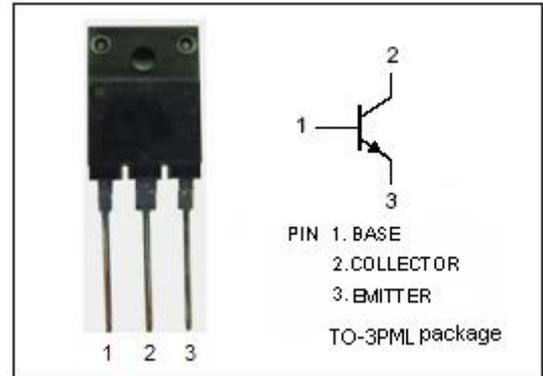


isc Silicon NPN Power Transistor
2SC3947
DESCRIPTION

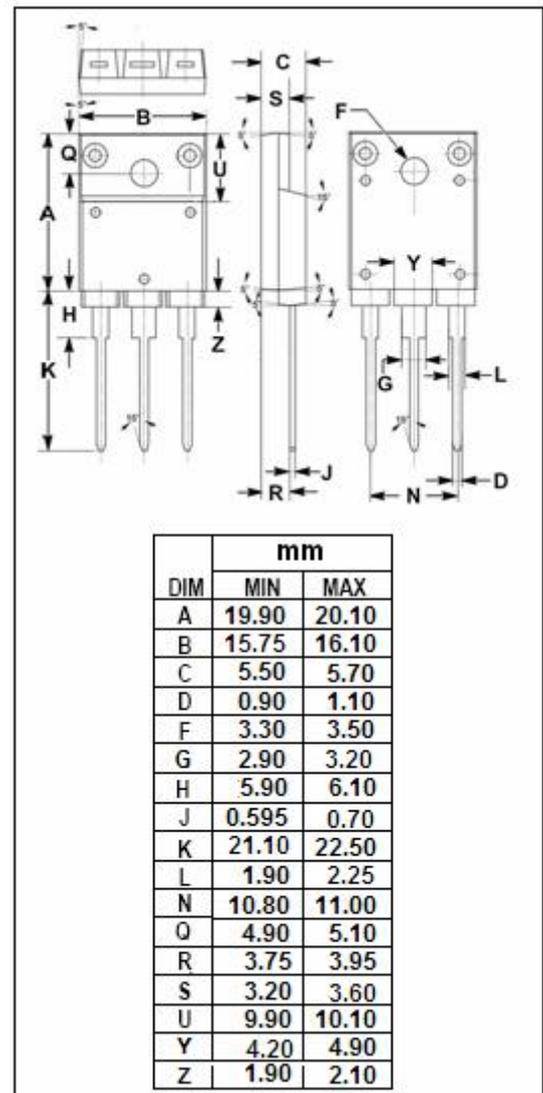
- High Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 500V(\text{Min})$
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for switching regulator applications.


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

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 @ $T_C=25^\circ\text{C}$	70	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



isc Silicon NPN Power Transistor

2SC3947

ELECTRICAL CHARACTERISTICS

T_C=25°C 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°C			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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