

isc Silicon NPN Power Transistor

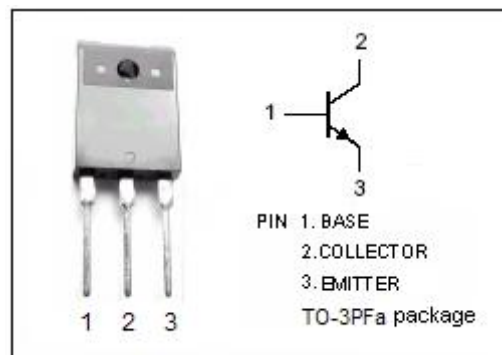
2SC3975

DESCRIPTION

- Collector-Base Breakdown Voltage-
: $V_{(BR)CBO} = 800V(\text{Min.})$
- Wide Area of Safe Operation
- High Speed Switching
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

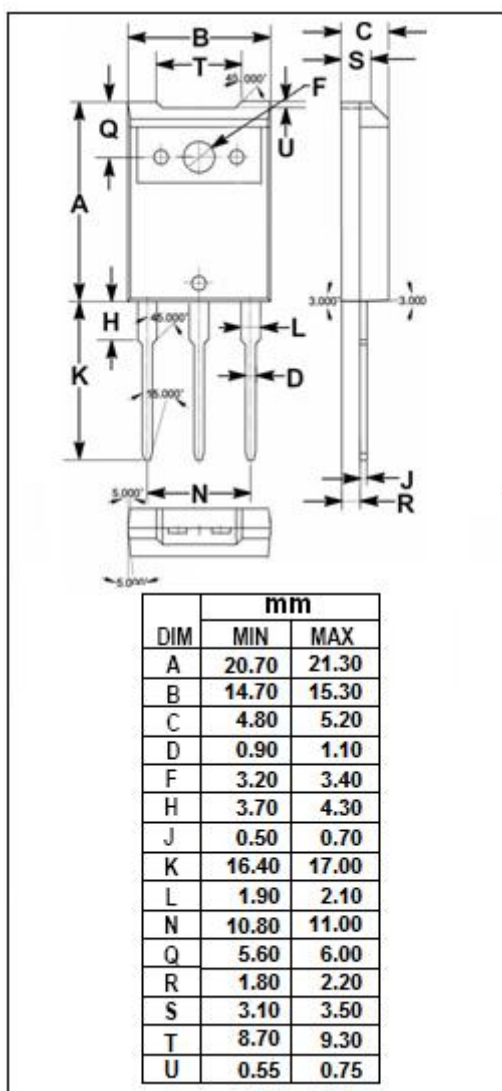
APPLICATIONS

- Designed for high speed switching applications.



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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	800	V
V_{CES}	Collector-Emitter Voltage	800	V
V_{CEO}	Collector-Emitter Voltage	500	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current-Continuous	10	A
I_{CM}	Collector Current-Peak	20	A
I_B	Base Current-Continuous	5	A
P_C	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	3	W
	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	100	
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

T_c=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 10mA; I _B = 0	500			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 6A; I _B = 1.2A			1.0	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 6A; I _B = 1.2A			1.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 800V; I _E = 0			100	μA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0			100	μA
h _{FE-1}	DC Current Gain	I _C = 0.1A; V _{CE} = 5V	15			
h _{FE-2}	DC Current Gain	I _C = 6A; V _{CE} = 5V	8			
f _T	Current-Gain—Bandwidth Product	I _C = 0.5A; V _{CE} = 10V; f= 1MHz		20		MHz

Switching Times

t _{on}	Turn-on Time	I _C = 6A; I _{B1} = 1.2A; I _{B2} = -2.4A; V _{CC} = 200V			1.0	μs
t _s	Storage Time				3.0	μs
t _f	Fall Time				0.3	μs

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