

isc Silicon NPN Power Transistor

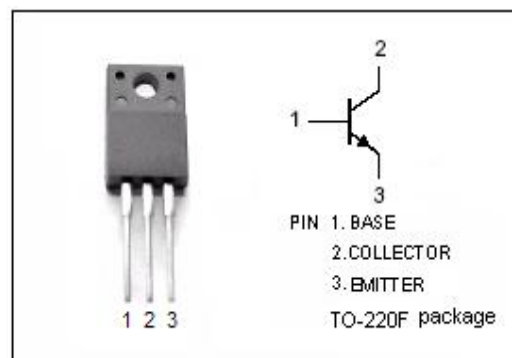
2SC3750

DESCRIPTION

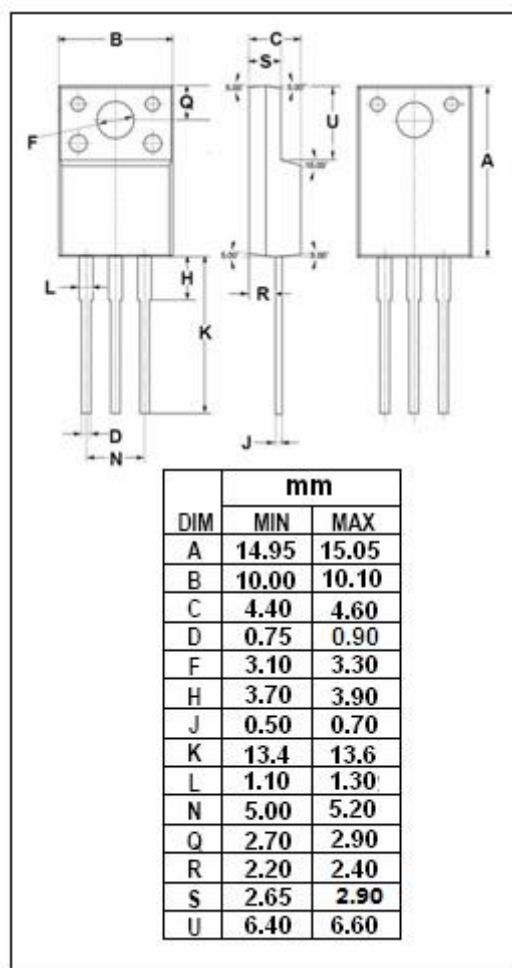
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 500V(\text{Min.})$
- High Switching Speed
- Wide Area of Safe Operation
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for switching regulator applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	800	V
V_{CEO}	Collector-Emitter Voltage	500	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Pulse	10	A
I_B	Base Current-Continuous	2	A
P_C	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	30	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 5mA; R _{BE} = ∞	500			V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 1mA; I _E = 0	800			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 1mA; I _C = 0	7			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 3A; I _B = 0.6A			1.0	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 3A; I _B = 0.6A			1.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 500V; I _E = 0			10	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0			10	μ A
h _{FE-1}	DC Current Gain	I _C = 0.6A; V _{CE} = 5V	15		50	
h _{FE-2}	DC Current Gain	I _C = 3A; V _{CE} = 5V	8			
C _{OB}	Collector Output Capacitance	I _E = 0; V _{CB} = 10V; f= 1MHz		50		pF
f _T	Current-Gain—Bandwidth Product	I _C = 0.6A; V _{CE} = 10V		18		MHz

Switching times

t _{on}	Turn-on Time	I _C = 4A, I _{B1} = 0.8A; I _{B2} = -1.6A; R _L = 50 Ω; V _{CC} = 200V			0.5	μ s
t _{stg}	Storage Time				3.0	μ s
t _f	Fall Time				0.3	μ s

◆ h_{FE-1} Classifications

L	M	N
15-30	20-40	30-50

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