

isc Silicon NPN Power Transistor

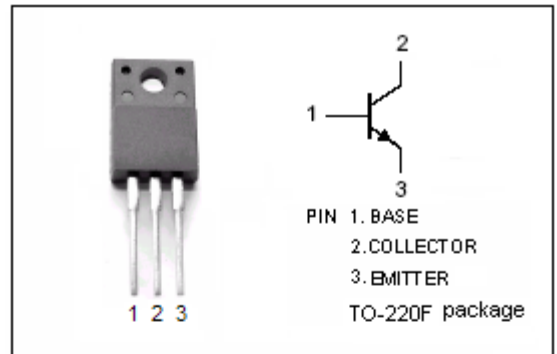
2SC3751

DESCRIPTION

- High Breakdown Voltage and High Reliability
- High Switching Speed
- Wide Area of Safe Operation

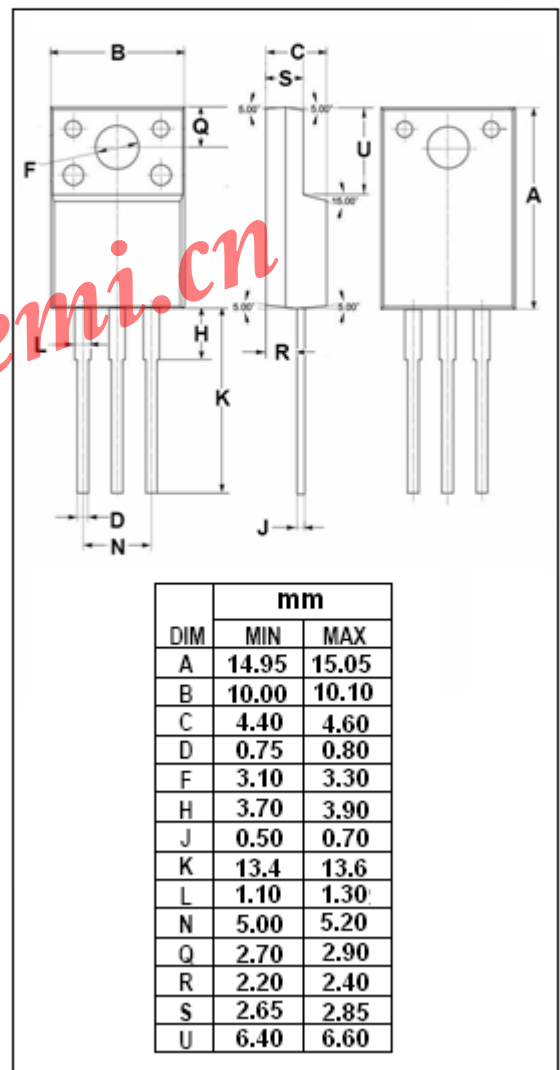
APPLICATIONS

- Designed for switching regulator applications.



ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CBO</sub>	Collector-Base Voltage	1100	V
V <sub>CEO</sub>	Collector-Emitter Voltage	800	V
V <sub>EBO</sub>	Emitter-Base Voltage	7	V
I <sub>C</sub>	Collector Current-Continuous	1.5	A
I <sub>CM</sub>	Collector Current-Pulse	5	A
I <sub>B</sub>	Base Current-Continuous	0.8	A
P <sub>C</sub>	Collector Power Dissipation @T <sub>C</sub> =25°C	25	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55~150	°C



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## ELECTRICAL CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 5mA; R <sub>BE</sub> = ∞	800			V
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 1mA; I <sub>E</sub> = 0	1100			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 1mA; I <sub>C</sub> = 0	7			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 0.75A; I <sub>B</sub> = 0.15A			2.0	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 0.75A; I <sub>B</sub> = 0.15A			1.5	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 800V; I <sub>E</sub> = 0			10	μ A
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0			10	μ A
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 0.1A; V <sub>CE</sub> = 5V	10		40	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 5V	8			
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 0.1A; V <sub>CE</sub> = 10V		15		MHz
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0; V <sub>CB</sub> = 10V; f= 1MHz		35		pF

## Switching times

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = 1A, I <sub>B1</sub> = 0.2A; I <sub>B2</sub> = -0.4A; R <sub>L</sub> = 400Ω, V <sub>CC</sub> = 400V			0.5	μ s
t <sub>stg</sub>	Storage Time				3.0	μ s
t <sub>f</sub>	Fall Time				0.3	μ s

◆ h<sub>FE-1</sub> Classifications

K	L	M
10-20	15-30	20-40