

isc Silicon NPN Power Transistor

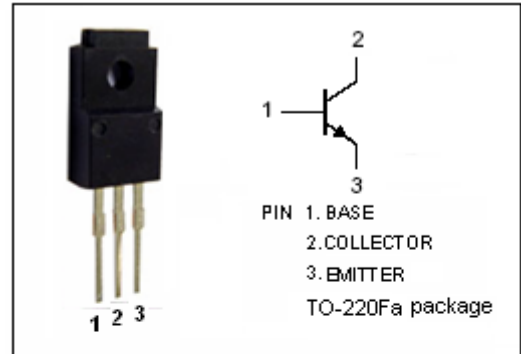
2SC3871

DESCRIPTION

- Collector-Base Breakdown Voltage-  
:  $V_{(BR)CBO} = 500V(\text{Min.})$
- Low Collector Saturation Voltage
- Wide Area of Safe Operation
- High Speed Switching

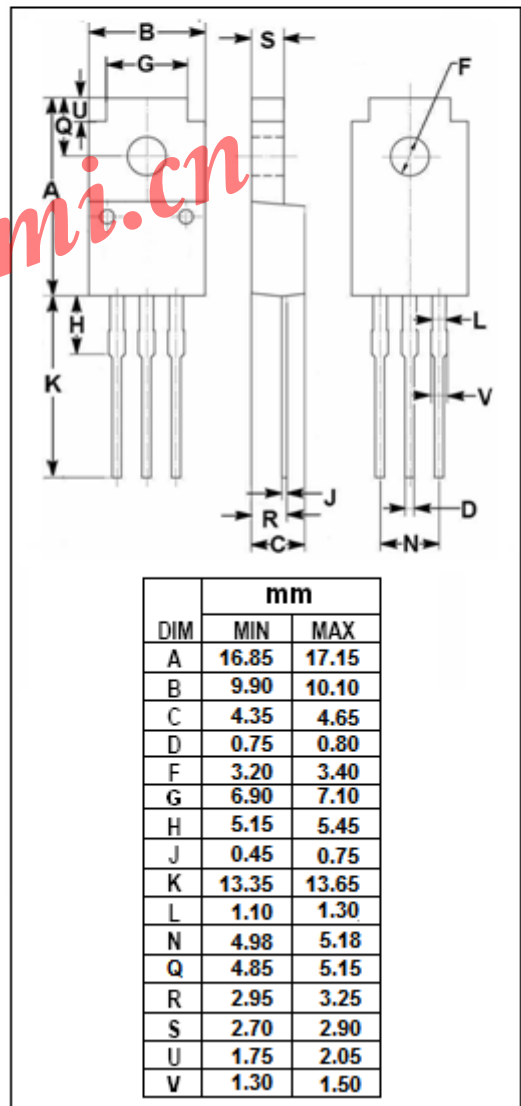
APPLICATIONS

- Designed for high speed switching applications.



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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	500	V
$V_{CES}$	Collector-Emitter Voltage	500	V
$V_{CEO}$	Collector-Emitter Voltage	400	V
$V_{EBO}$	Emitter-Base Voltage	7	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 @ $T_a=25^\circ\text{C}$	2	W
	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	45	
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



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**ELECTRICAL CHARACTERISTICS**

T<sub>C</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> = 10mA; I <sub>B</sub> = 0	400			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 5A; I <sub>B</sub> = 1A			1.0	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 5A; I <sub>B</sub> = 1A			1.5	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 500V; I <sub>E</sub> = 0			100	μ A
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0			100	μ A
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 0.1A; V <sub>CE</sub> = 5V	15			
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 5A; V <sub>CE</sub> = 5V	8			
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 10V		25		MHz

Switching Times

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = 5A; I <sub>B1</sub> = 1A; I <sub>B2</sub> = -2A; V <sub>CC</sub> = 150V			0.7	μ s
t <sub>s</sub>	Storage Time				2.0	μ s
t <sub>f</sub>	Fall Time				0.3	μ s