

isc Silicon NPN Power Transistors
2SC4053
DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 450V(\text{Min})$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

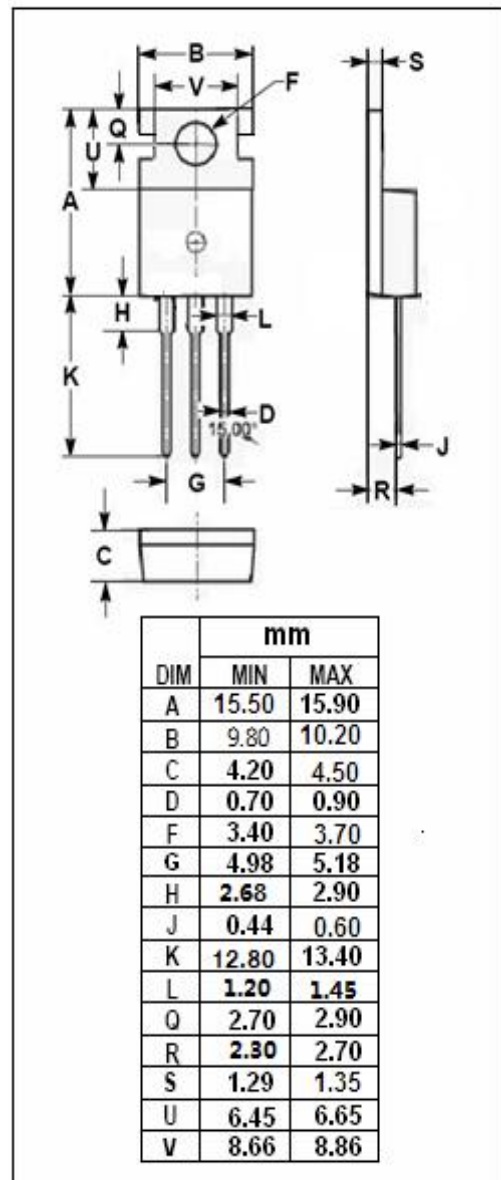
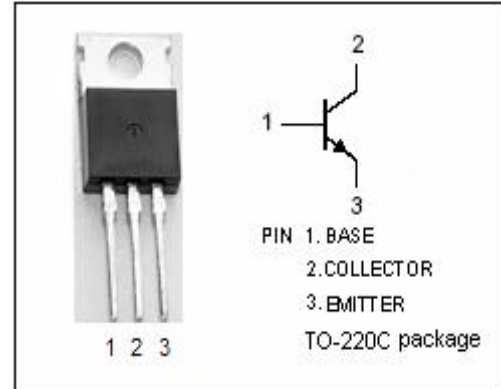
- Switching regulators
- High frequency inverters
- General purpose power amplifiers

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	600	V
V_{CEO}	Collector-Emitter Voltage	450	V
V_{CEX}	Collector-Emitter Voltage $V_{EB} = 5V$	600	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Peak	10	A
I_B	Base Current-Continuous	2	A
I_{BM}	Base Current-Peak	4	A
P_T	Total Power Dissipation @ $T_c=25^\circ\text{C}$	50	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	2.5	$^\circ\text{C}/\text{W}$



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ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CE0(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 50mA; I _B = 0	450			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	At rated Voltage			100	μ A
I _{CEO}	Collector Cutoff Current	At rated Voltage			100	μ A
I _{EBO}	Emitter Cutoff Current	At rated Voltage			100	μ A
h _{FE-1}	DC Current Gain	I _C =2.5A ; V _{CE} = 5V	10			
h _{FE-2}	DC Current Gain	I _C = 1mA ; V _{CE} = 5V	5			
f _T	Current-Gain—Bandwidth Product	I _C = 0.5A ; V _{CE} = 10V		20		MHz

Switching times

t _{on}	Turn-on Time	I _C = 2.5A, I _{B1} =0.5A; I _{B2} = -1A R _L = 60 Ω ; V _{BB2} =4V			0.5	μ s
t _{stg}	Storage Time				2.0	μ s
t _f	Fall Time				0.2	μ s

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