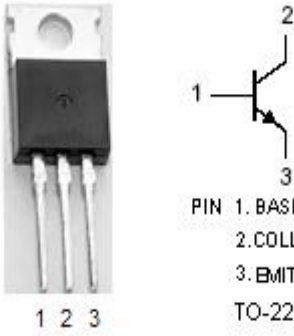
isc Silicon NPN Power Transistors — 2SC4051

DESCRIPTION

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



APPLICATIONS

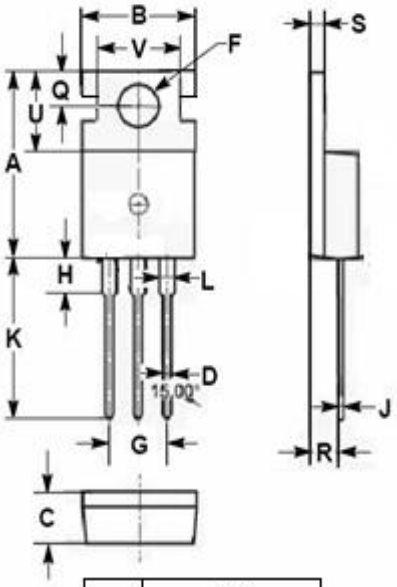
- Switching regulators
- High frequency inverters
- General purpose power amplifiers

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

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	3	A
I_{CM}	Collector Current-Peak	6	A
I_B	Base Current-Continuous	1	A
I_{BM}	Base Current-Peak	2	A
P_T	Total Power Dissipation @ T_C=25℃	40	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	3.12	℃/W



DIM	mm MIN	mm MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 50mA; I_B= 0	450			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 1.5A; I_B= 0.3A			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 1.5A; I_B= 0.3A			1.5	V
I_{CBO}	Collector Cutoff Current	At rated Voltage			100	μA
I_{CEO}	Collector Cutoff Current	At rated Voltage			100	μA
I_{EBO}	Emitter Cutoff Current	At rated Voltage			100	μA
h_{FE-1}	DC Current Gain	I_C= 1.5A ; 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= 0.3A ; V_{CE}= 10V		20		MHz
Switching times						
t_{on}	Turn-on Time	I_C= 1.5A , I_{B1}=0.3A; I_{B2}= -0.6A R_L= 100Ω ; V_{BB2}= 4V			0.5	μs
t_{stg}	Storage Time				2.0	μs
t_f	Fall Time				0.2	μs