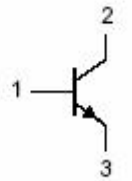
isc Silicon NPN Power Transistors — 2SD381



PIN 1. BASE
2.COLLECTOR
3. EMITTER
TO-220C package

DESCRIPTION

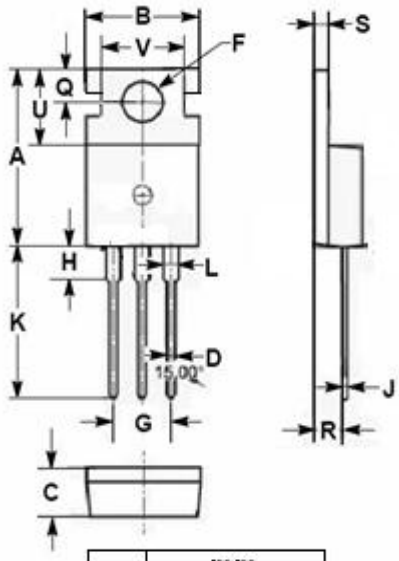
- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 120V(Min.)
- Complement to Type 2SB536
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Audio frequency power amplifier, low speed switching.
- Suitable for driver of 60~100 watts audio amplifier.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	130	V
V_{CEO}	Collector-Emitter Voltage	120	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	1.5	A
I_{CM}	Collector Current-Peak	3.0	A
I_B	Base Current	0.3	A
P_C	Collector Power Dissipation@T_C=25℃	20	W
	Collector Power Dissipation@T_a=25℃	1.5	
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55~150	℃



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

isc Silicon NPN Power Transistors 2SD381

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 1A; I_B= 0.1A			2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 1A; I_B= 0.1A			1.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 120V; I_E= 0			1.0	μA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 3V; I_C= 0			1.0	μA
h_{FE-1}	DC Current Gain	I_C= 5mA ; V_{CE}= 5V	25	65		
h_{FE-2}	DC Current Gain	I_C= 0.3A ; V_{CE}= 5V	40		250	
C_{OB}	Output Capacitance	I_E= 0; V_{CB}= 10V; f= 0.1MHz		25		pF
f_T	Current-Gain—Bandwidth Product	I_C= 0.1A; V_{CE}= 5V		45		MHz

◆ **h_{FE-2} Classifications**

N	M	L	K
40-80	60-120	80-160	120-250