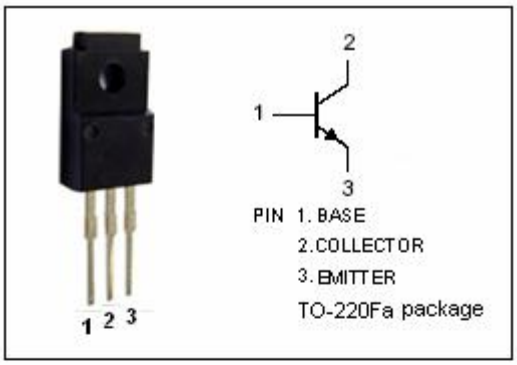
isc Silicon NPN Power Transistor — 2SD1412

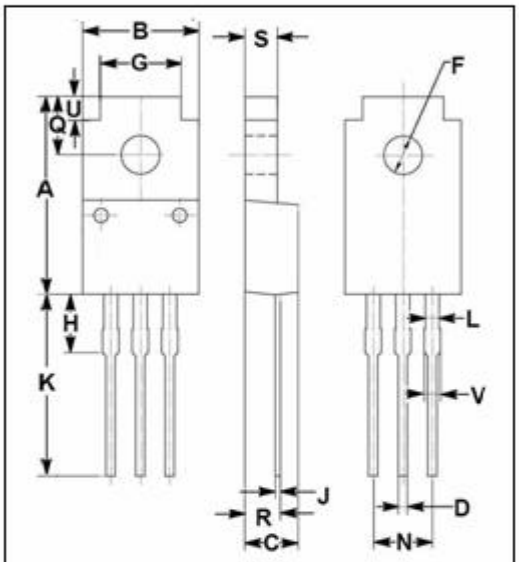
DESCRIPTION

- Low Collector Saturation Voltage
  : $V_{CE(sat)}$= 0.4V(Max)@ I_C= 4A
- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 50V (Min)
- Complement to Type 2SB1019
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

- High current switching applications.
- Power amplifier applications.



DIM	mm MIN	mm MAX
A	16.85	17.15
B	9.54	10.10
C	4.35	4.65
D	0.75	0.90
F	3.20	3.40
G	6.90	7.20
H	5.15	5.45
J	0.45	0.75
K	13.35	13.65
L	1.10	1.30
N	4.98	5.18
Q	4.85	5.15
R	2.55	3.25
S	2.70	2.90
U	1.75	2.05
V	1.30	1.50

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	70	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	7	A
I_B	Base Current-Continuous	1	A
P_C	Collector Power Dissipation @ T_a=25℃	2	W
	Collector Power Dissipation @ T_C=25℃	30	
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C= 30mA ; I_B= 0	50			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 4A; I_B= 0.4A			0.4	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 4A; I_B= 0.4A			1.2	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 70V; I_E= 0			30	μA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0			50	μA
h_{FE-1}	DC Current Gain	I_C= 1A; V_{CE}= 1V	70		240	
h_{FE-2}	DC Current Gain	I_C= 4A; V_{CE}= 1V	30			
C_{OB}	Output Capacitance	I_E= 0; V_{CB}= 10V, f_{test}= 1MHz		250		pF
f_T	Current-Gain—Bandwidth Product	I_C= 1A; V_{CE}= 4V		10		MHz
Switching Times						
t_{on}	Turn-on Time	I_{B1}= I_{B2}= 0.3A; R_L= 10Ω ; V_{CC}= 30V		0.2		μs
t_{stg}	Storage Time			2.5		μs
t_f	Fall Time			0.5		μs

◆ **h_{FE} classifications**

O	Y
70-140	120-240

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