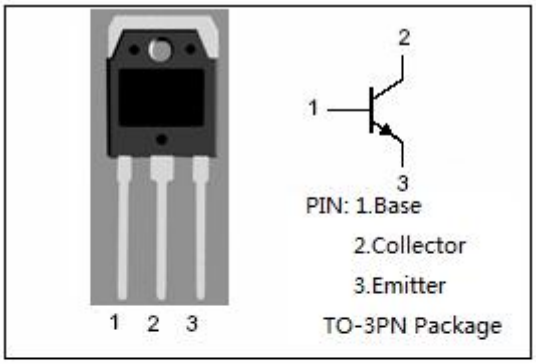
isc Silicon NPN Power Transistor — 2SD1213



DESCRIPTION

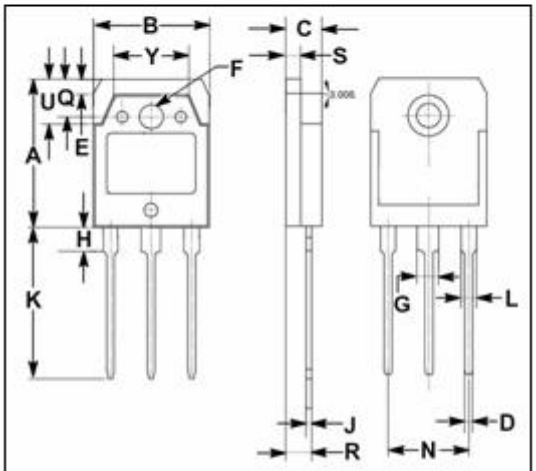
- High Collector Current:: I_C= 20A
- Low Collector Saturation Voltage
  : $V_{CE(sat)}$= 0.4V(Max)@I_C= 8A
- Complement to Type 2SB904
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for large current switching of relay drivers, high-speed inverters,converters applications.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	20	A
I_{CM}	Collector Current-Peak	30	A
P_C	Total Power Dissipation @ T_C=25℃	60	W
	Total Power Dissipation @ T_a=25℃	2.5	
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃



DIM	mm MIN	mm MAX
A	19.60	20.30
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.20
H	3.20	3.40
J	0.595	0.605
K	19.80	20.70
L	1.90	2.20
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.100
U	5.90	6.20
Y	9.90	10.10

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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= 1mA; R_{BE}= ∞	30			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C= 1mA; I_E= 0	60			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E= 1mA; I_C= 0	6			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 8A; I_B= 0.4A			0.4	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 40V; I_E= 0			0.1	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 4V; I_C= 0			0.1	mA
h_{FE-1}	DC Current Gain	I_C= 1A; V_{CE}= 2V	70		280	
h_{FE-2}	DC Current Gain	I_C= 10A; V_{CE}= 2V	30			
f_T	Current-Gain—Bandwidth Product	I_C= 1A; V_{CE}= 5V		120		MHz
Switching times						
t_{on}	Turn-on Time	R_L= 1Ω, V_{CC}= 10V I_C= 10A; I_{B1}= I_{B2}= 0.5A		0.3		μs
t_{stg}	Storage Time			0.6		μs
t_f	Fall Time			0.02		μs

◆ **h_{FE-1} Classifications**

Q	R	S
70-140	100-200	140-280