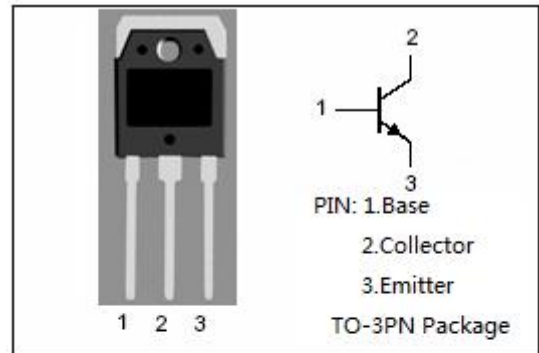


isc Silicon NPN Power Transistor
2SD1213
DESCRIPTION

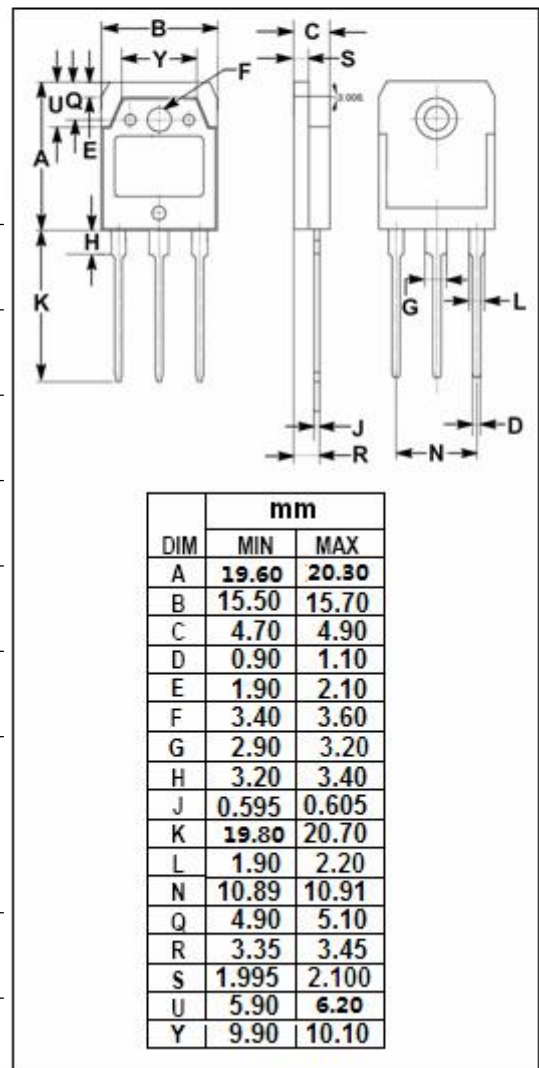
- High Collector Current:: $I_C = 20A$
- Low Collector Saturation Voltage
: $V_{CE(sat)} = 0.4V(\text{Max}) @ I_C = 8A$
- Complement to Type 2SB904
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

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


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

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 @ $T_c = 25^\circ\text{C}$	60	W
	Total Power Dissipation @ $T_a = 25^\circ\text{C}$	2.5	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



isc Silicon NPN Power Transistor

2SD1213

ELECTRICAL CHARACTERISTICS

T_c=25°C 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

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