

isc Silicon NPN Power Transistors

2SD1238L

DESCRIPTION

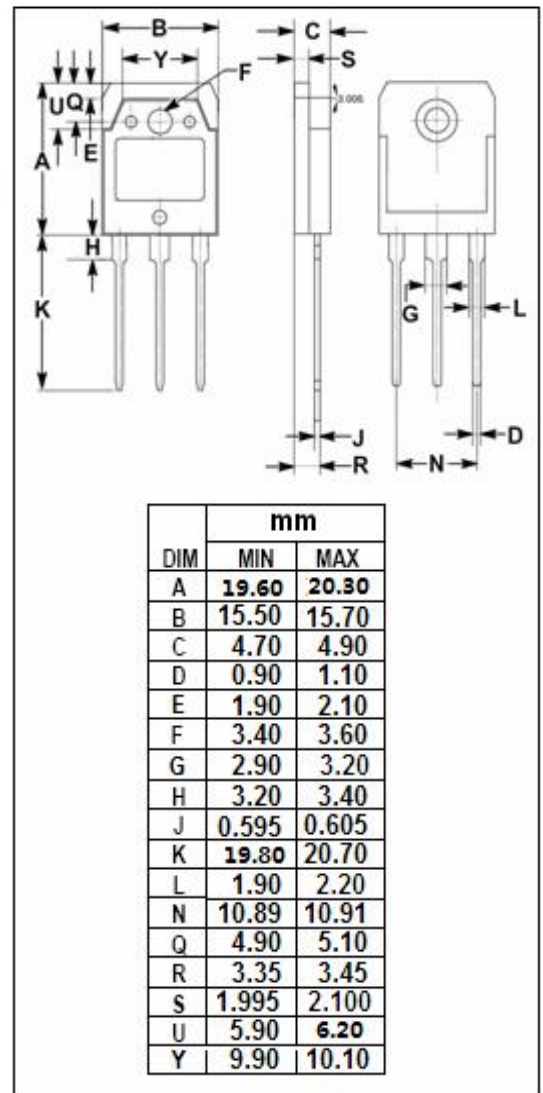
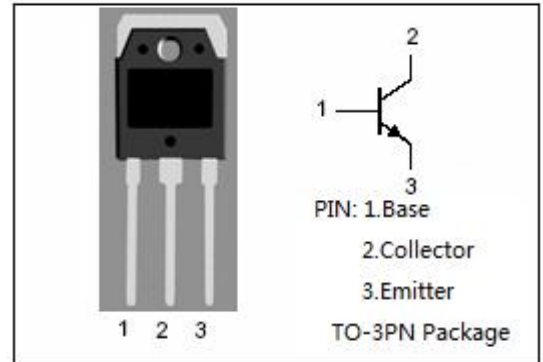
- Low Collector Saturation Voltage
: $V_{CE(sat)} = 0.4V(Max) @ I_C = 6A$
- Wide Area of Safe Operation
- Complement to Type 2SB922L
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for relay drivers , high-speed inverters, converters, and other general high-current switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	90	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	12	A
I_{CP}	Collector Current-Pulse	20	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ C$	80	W
T_J	Junction Temperature	150	$^\circ C$
T_{stg}	Storage Temperature Range	-55~150	$^\circ C$



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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} = ∞	80			V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 1mA ; I _E = 0	90			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 = 6A ; I _B = 0.6A			0.4	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 80V ; I _E = 0			100	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 4V ; I _C =0			100	μ A
h _{FE-1}	DC Current Gain	I _C = 1A ; V _{CE} = 2V	70		280	
h _{FE-2}	DC Current Gain	I _C = 6A ; V _{CE} = 2V	30			
f _T	Current-Gain—Bandwidth Product	I _C = 1A ; V _{CE} = 5V		20		MHz

Switching times

t _{on}	Turn-on Time	I _C = 5A ; I _{B1} = I _{B2} = 0.5A R _L = 10 Ω ; P _W =20 μ s ; V _{CC} = 50V		0.2		μ s
t _{stg}	Storage Time			1.7		μ s
t _f	Fall Time			0.2		μ s

◆ h_{FE-1} Classifications

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

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