

isc Silicon NPN Power Transistor

2SD1187

DESCRIPTION

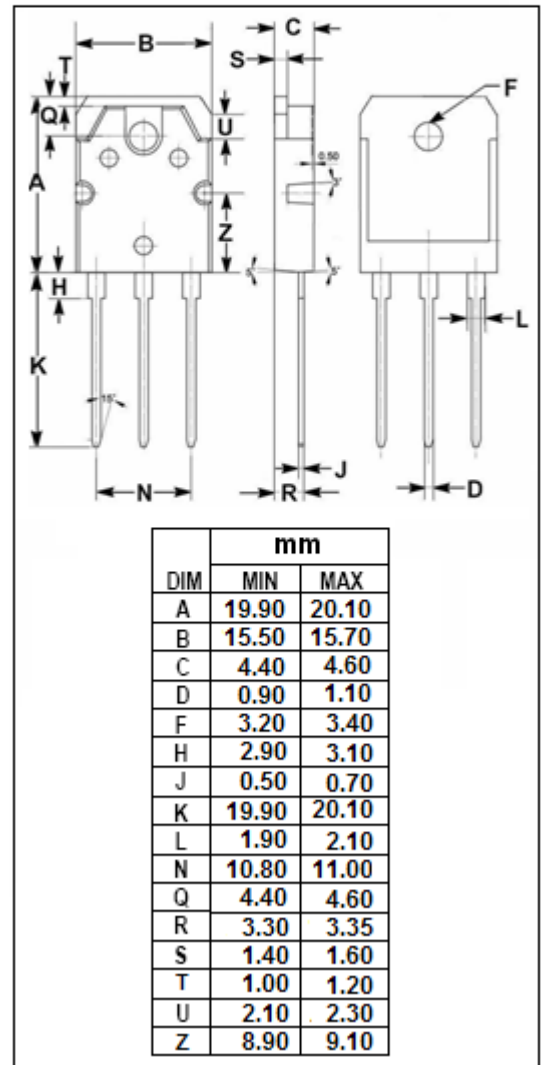
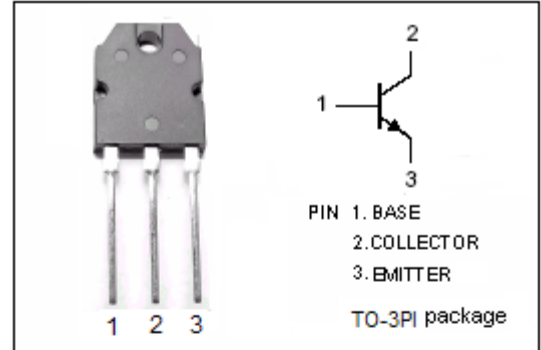
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 80V(\text{Min})$
- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 0.5V(\text{Max.}) @ I_C = 6A$
- High Power Dissipation

APPLICATIONS

- High power switching applications
- DC-DC converter and DC-AC inverter applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	10	A
I_B	Base Current-Continuous	2	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	80	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



isc Silicon NPN Power Transistor

2SD1187

ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=50\text{mA}; I_B=0$	80			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=0.3\text{A}$			0.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=0.3\text{A}$			1.4	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=100\text{V}; I_E=0$			10	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			10	μA
h_{FE-1}	DC Current Gain	$I_C=1\text{A}; V_{CE}=1\text{V}$	70		240	
h_{FE-2}	DC Current Gain	$I_C=6\text{A}; V_{CE}=1\text{V}$	30			
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1.0\text{MHz}$		350		pF
f_T	Current-Gain—Bandwidth Product	$I_C=1\text{A}; V_{CE}=4\text{V}$		10		MHz

Switching Times

t_{on}	Turn-on Time	$I_{B1}=-I_{B2}=0.3\text{A}; R_L=5\Omega;$ $V_{CC}=30\text{V};$ $P_W=20\mu\text{s}; \text{Duty Cycle}\leq 1\%$		0.5		μs
t_{stg}	Storage Time			2.5		μs
t_f	Fall Time			0.8		μs

◆ h_{FE-1} Classifications

O	Y
70-140	120-240