

Silicon NPN Power Transistor

D209L

DESCRIPTION

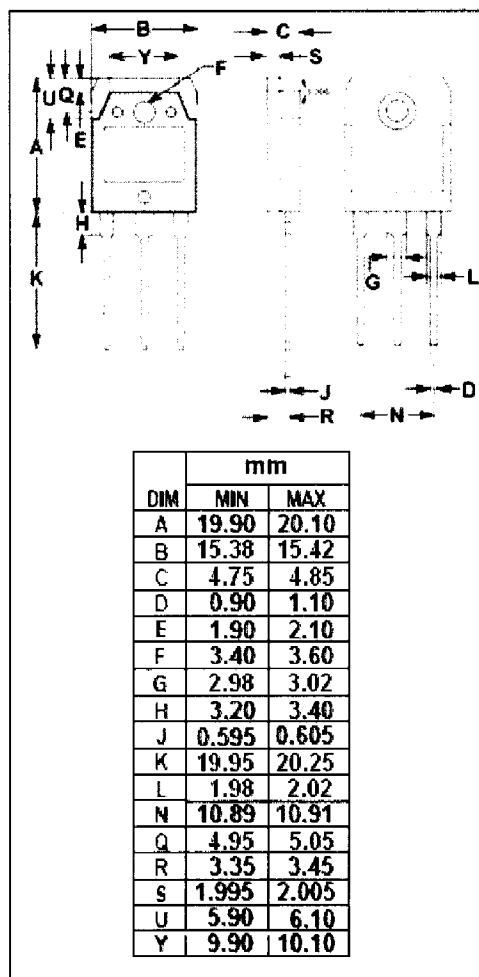
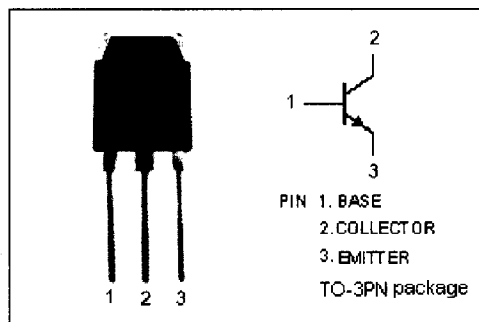
- High Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 400V(\text{Min})$
- High Switching Speed
- High Reliability

APPLICATIONS

- Switching regulators
- Ultrasonic generators
- High frequency inverters
- General purpose power amplifiers

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	700	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base voltage	9	V
I_C	Collector Current-Continuous	12	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	100	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



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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	$I_C = 10\text{mA}; I_B = 0$	400			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 1\text{mA}; I_E = 0$	700			V
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 7\text{V}; I_C = 0$			0.01	mA
h_{FE1}	DC Current Gain	$I_C = 5\text{A}; V_{CE} = 5\text{V}$	8		40	
h_{FE2}	DC Current Gain	$I_C = 8\text{A}; V_{CE} = 5\text{V}$	6		30	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 5\text{A}; I_B = 1\text{A}$			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 8\text{A}; I_B = 1.6\text{A}$			1.2	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 100\text{mA}, f = 1\text{MHz}$	5			MHZ

Switching times

t_s	Storage Time	$I_C = 8\text{A}, I_{B1} = -I_{B2} = 1.6\text{A}$			3.0	μs
t_f	Fall Time				0.7	μs