

isc Silicon NPN Power Transistor

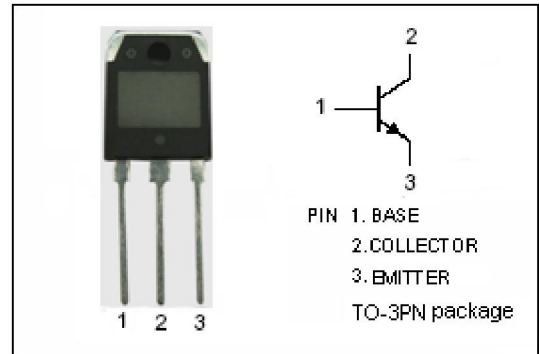
D209L

DESCRIPTION

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

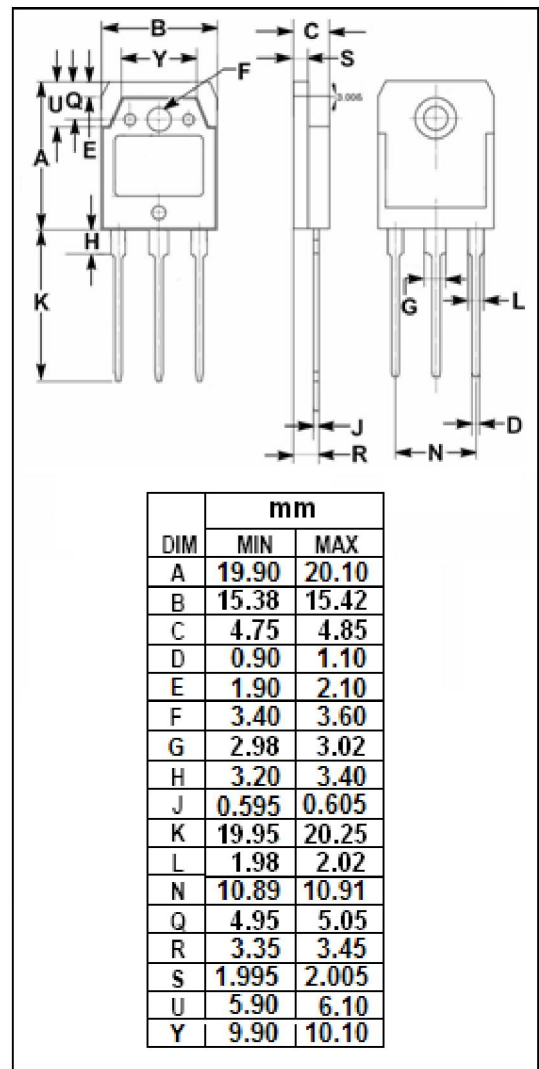
APPLICATIONS

- 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