

isc Silicon NPN Darlington Power Transistor

2SD1022

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)}=100V(\text{Min})$
- High DC Current Gain
: $h_{FE}=1500(\text{Min}) @ I_C=3A$
- Low Saturation Voltage

APPLICATIONS

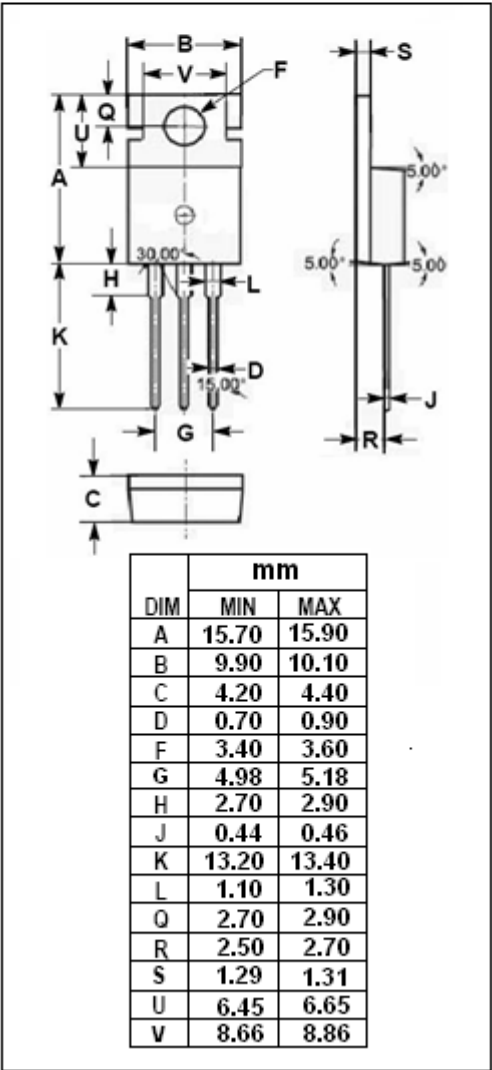
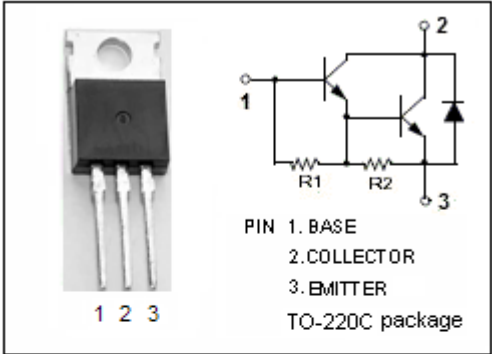
- Designed for general purpoe amplifier applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	5	A
I_{CP}	Collector Current-Peak	8	A
I_B	Base Current-Continuous	0.5	A
I_{BM}	Base Current-Peak	1	A
P_C	Collector Power Dissipation @ $T_C=25^{\circ}C$	30	W
T_J	Junction Temperature	150	$^{\circ}C$
T_{stg}	Storage Temperature Range	-55~150	$^{\circ}C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	4.17	$^{\circ}C/W$



isc Silicon NPN Darlington Power Transistor**2SD1022****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 3A; I_B = 3mA$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 3A; I_B = 3mA$			2.0	V
I_{CBO}	Collector Cutoff Current	$V_{CB} = 100V; I_E = 0$			0.1	mA
I_{CEO}	Collector Cutoff Current	$V_{CE} = 100V; I_B = 0$			0.1	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 7V; I_C = 0$			5	mA
h_{FE}	DC Current Gain	$I_C = 3A; V_{CE} = 3V$	1500		30000	
f_T	Current-Gain—Bandwidth Product	$I_C = 0.5A; V_{CE} = 10V$		20		MHz

Switching times

t_{on}	Turn-on Time	$I_C = 5A, I_{B1} = -I_{B2} = 5mA$ $R_L = 5\Omega; V_{BB2} = 4V$			2.0	μs
t_{stg}	Storage Time				5.0	μs
t_f	Fall Time				3.0	μs