

Silicon NPN Darlington Power Transistor

2SC3144

DESCRIPTION

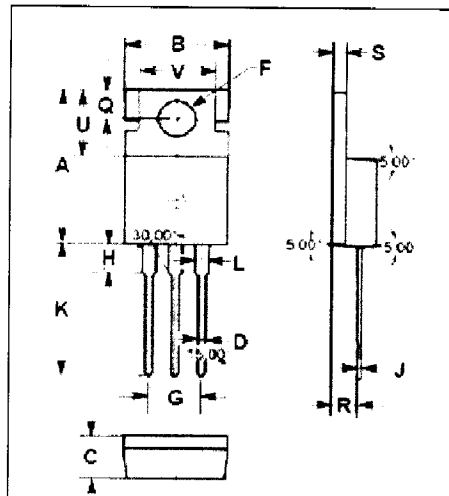
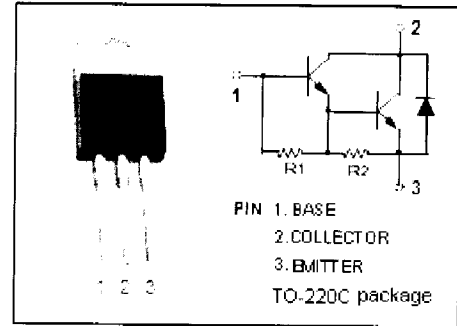
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 60V(\text{Min})$
- High DC Current Gain
: $h_{FE} = 2000(\text{Min}) @ I_C = 1.5A$
- Wide Area of Safe Operation
- Complement to Type 2SA1258

APPLICATIONS

- Designed for high-speed drivers applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	70	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	3	A
I_{CP}	Collector Current-Peak	5	A
P_C	Collector Power Dissipation @ $T_a = 25^\circ\text{C}$	1.75	W
	Collector Power Dissipation @ $T_c = 25^\circ\text{C}$	20	
T_J	Junction Temperature	125	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~125	$^\circ\text{C}$



DIM	mm	
	MIN	MAX
A	15.70	15.90
B	9.90	10.10
C	4.20	4.40
D	0.70	0.90
F	3.40	3.60
G	4.98	5.18
H	2.70	2.90
J	0.44	0.46
K	13.20	13.40
L	1.10	1.30
Q	2.70	2.90
R	2.50	2.70
S	1.29	1.31
U	6.45	6.65
V	8.66	8.86

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Silicon NPN Darlington Power Transistor

2SC3144

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=5\text{mA}; I_E=0$	70			V
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=50\text{mA}; R_{BE}=\infty$	60			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=1.5\text{A}; I_B=3\text{mA}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=1.5\text{A}; I_B=3\text{mA}$			2.0	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=40\text{V}; I_E=0$			100	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			3	mA
h_{FE}	DC Current Gain	$I_C=1.5\text{A}; V_{CE}=2\text{V}$	2000			
f_T	Current-Gain—Bandwidth Product	$I_C=1.5\text{A}; V_{CE}=5\text{V}$		200		MHz

Switching times

t_{on}	Turn-on Time	$I_C=1\text{A}; I_{B1}=-I_{B2}=2\text{mA}$ $R_L=20\Omega; V_{CC}\approx 20\text{V}$		0.3		μs
t_{stg}	Storage Time			1.2		μs
t_f	Fall Time			0.2		μs