

Silicon PNP Darlington Power Transistor

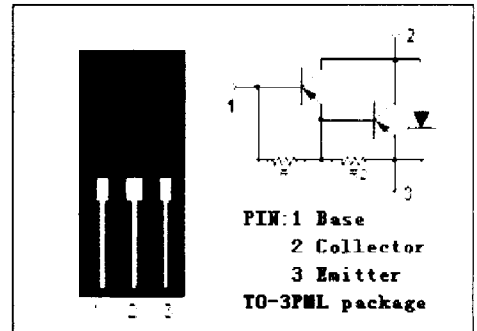
2SB1257

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
 $V_{(BR)CEO} = -60V(\text{Min})$
- High DC Current Gain-
 $h_{FE} = 2000(\text{Min})@I_C = -3A$
- Complement to Type 2SD2014

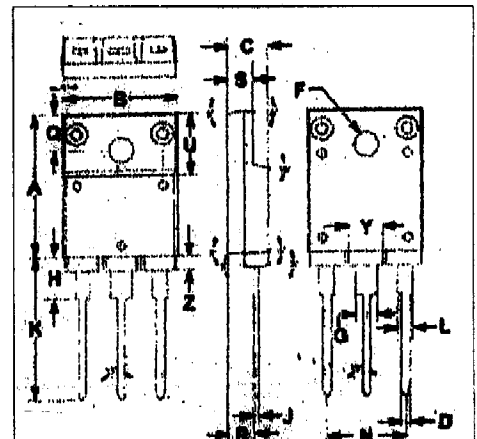
APPLICATIONS

- Driver for solenoid, relay and motor and general purpose applications.



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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	-60	V
V_{CEO}	Collector-Emitter Voltage	-60	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current-Continuous	-4	A
I_{CP}	Collector Current-Pulse	-6	A
I_B	Base Current-Continuous	-1	A
P_C	Collector Power Dissipation @ $T_C=25^{\circ}C$	25	W
T_J	Junction Temperature	150	$^{\circ}C$
T_{stg}	Storage Temperature Range	-55~150	$^{\circ}C$



DIM	mm	
	MIN	MAX
A	19.90	20.10
B	15.75	16.10
C	5.50	5.70
D	0.90	1.10
E	3.30	3.50
G	2.90	3.20
H	5.90	6.10
I	0.595	0.70
K	21.10	22.50
L	1.90	2.25
N	10.90	11.00
O	4.90	5.10
R	3.75	3.95
S	3.20	3.60
U	9.90	10.10
Y	4.20	4.90
Z	1.90	2.10



Quality Semi-Conductors

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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	$I_C = -10\text{mA}; I_B = 0$	-60			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -3\text{A}; I_B = -6\text{mA}$			-1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -3\text{A}; I_B = -6\text{mA}$			-2.0	V
I_{CBO}	Collector Cutoff Current	$V_{CB} = -60\text{V}; I_E = 0$			-10	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -6\text{V}; I_C = 0$			-5	mA
h_{FE}	DC Current Gain	$I_C = -3\text{A}; V_{CE} = -4\text{V}$	2000			
C_{OB}	Output Capacitance	$I_E = 0; V_{CB} = -10\text{V}; f_{test} = 1.0\text{MHz}$		75		pF
f_T	Current-Gain—Bandwidth Product	$I_E = 0.2\text{A}; V_{CE} = -12\text{V}$		150		MHz

Switching Times

t_{on}	Turn-on Time	$I_C = -3\text{A}; I_{B1} = -I_{B2} = -10\text{mA}; V_{CC} = -30\text{V}; R_i = 10\Omega$	0.4		μs
t_{stg}	Storage Time		0.8		μs
t_f	Fall Time		0.6		μs