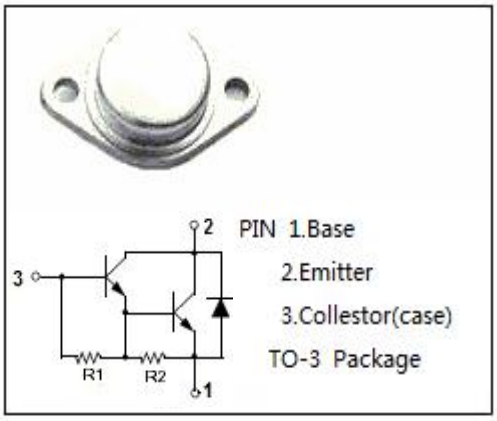
isc Silicon NPN Darlington Power Transistor 2SD523

DESCRIPTION

- Collector-Emitter Breakdown V_{CE}=80V(Min.)
- High DC Current Gain-
  : h_{FE}= 1000(Min.)@I_C= 3A
- Low Collector Saturation Voltage-
  : $V_{CE\ (sat)}$= 1.5V(Max.)@ I_C= 3A
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

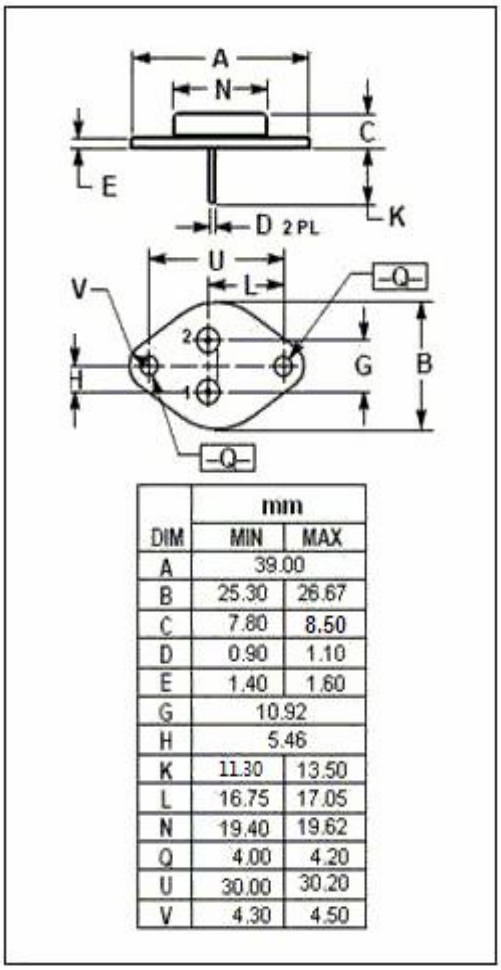


APPLICATIONS

- Designed for power switching applications.

ABSOLUTE MAXIMUM RATINGS (T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continunous	7	A
I_B	Base Current-Continunous	0.2	A
P_C	Collector Power Dissipation @T_C=25℃	50	W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-65~+150	℃



DIM	mm MIN	MAX
A	39.00	
B	25.30	26.67
C	7.80	8.50
D	0.90	1.10
E	1.40	1.60
G	10.92	
H	5.46	
K	11.30	13.50
L	16.75	17.05
N	19.40	19.62
Q	4.00	4.20
U	30.00	30.20
V	4.30	4.50

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C= 30mA; I_B= 0	80			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 3A; I_B= 6mA		0.9	1.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 7A; I_B= 14mA		1.2	2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 3A; I_B= 6mA		1.5	2.5	V
I_{CBO}	Collector Cutoff Current	V_{CE}= 80V; I_B= 0			0.1	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0			3.0	mA
h_{FE-1}	DC Current Gain	I_C= 3A, V_{CE}= 3V	2000		15000	
h_{FE-2}	DC Current Gain	I_C= 7A, V_{CE}= 3V	1000			
Switching Times						
t_{on}	Turn-on Time	I_C= 3A, I_{B1}= -I_{B2}=6mA; V_{CC}= 45V; R_L= 15Ω		0.8		μs
t_{stg}	Storage Time			3.0		μs
t_f	Fall Time			2.5		μs

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