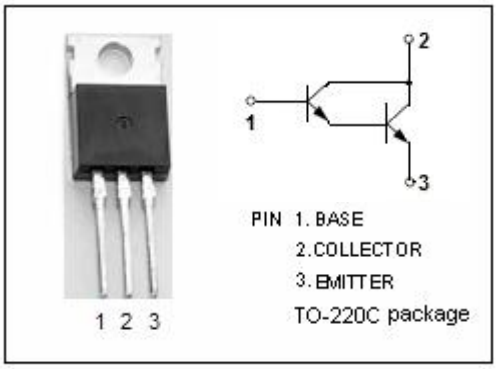
isc Silicon NPN Darlington Power Transistor 2SD689



DESCRIPTION

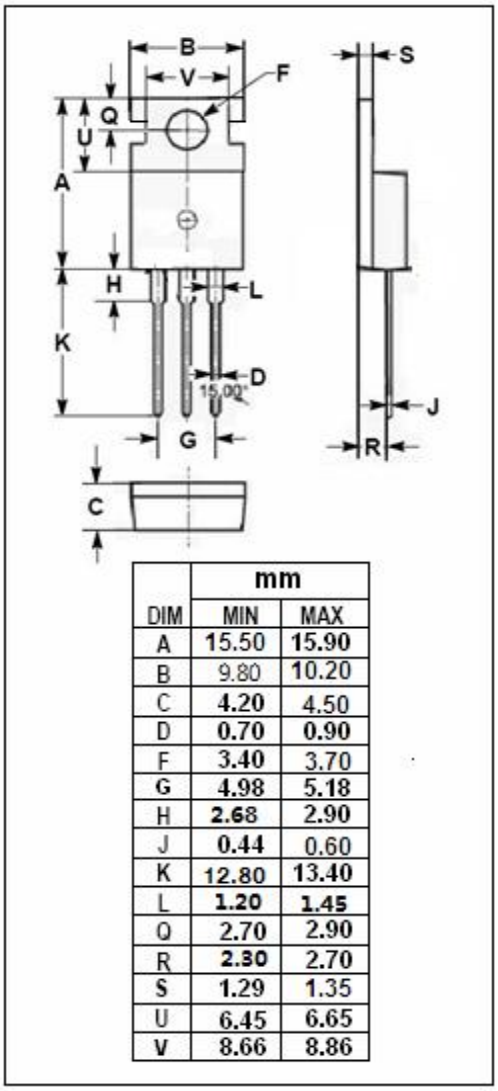
- High DC Current Gain-
  : h_{FE} = 1000(Min)@ I_C= 1A
- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$ = 100V(Min)
- Low Collector-Emitter Saturation Voltage-
  : $V_{CE(sat)}$ = 1.5V(Max)@ I_C= 1A
- Complement to Type 2SB679
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Low frequency medium power amplifier and medium speed switching applications.
- Pulse motor driver, relay drive and hammer drive applications.

ABSOLUTE MAXIMUM RATINGS (T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	10	V
I_C	Collector Current-Continuous	1.5	A
P_C	Collector Power Dissipation T_C=25℃	10	W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃



DIM	mm MIN	MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

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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	100			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E= 5mA; I_C= 0	10			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 1A ,I_B= 2mA			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 1A ,I_B= 2mA			2.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 100V, I_E= 0			10	μA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 10V; I_C= 0			10	μA
h_{FE-1}	DC Current Gain	I_C= 0.1A ; V_{CE}= 2V	2000			
h_{FE-2}	DC Current Gain	I_C= 1A ; V_{CE}= 2V	1000			
Switching Times						
t_{on}	Turn-On Time	I_{B1}= I_{B2}= 2mA; V_{CC}= 30V R_L= 30Ω ;P_W=20 μs; Duty Cycle≤1%		0.3		μs
t_s	Storage Time			2.0		μs
t_f	Fall Time			0.7		μs

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