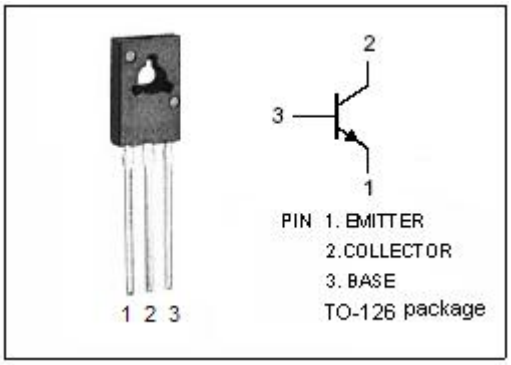
isc Silicon NPN Power Transistors — BDW55/57/59

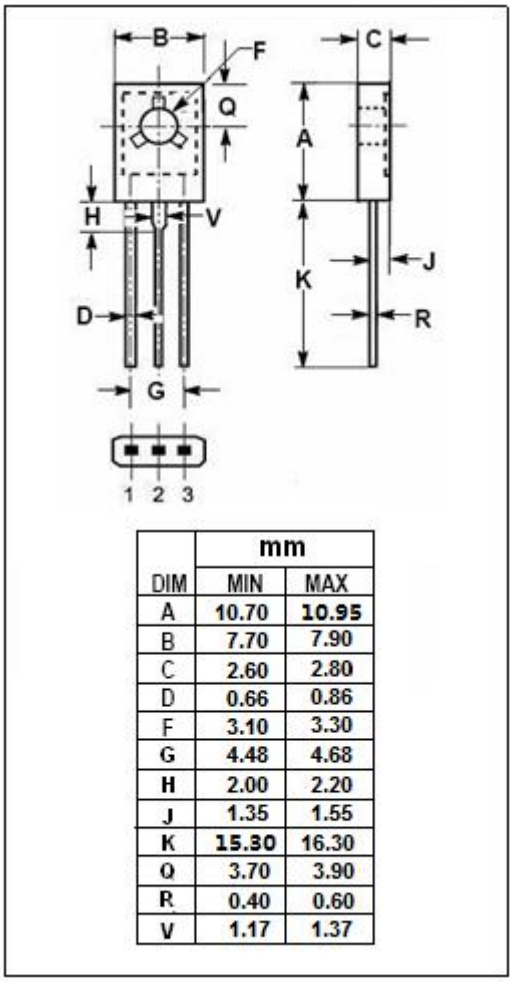
DESCRIPTION

- Collector–Emitter Sustaining Voltage–
  : $V_{CEO(SUS)}$= 45V- BDW55
  = 60V- BDW57
  = 80V- BDW59
- Complement to Type BDW56/58/60
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

- Designed for use in professional equipment such as telecommunication and etc.



DIM	mm MIN	mm MAX
A	10.70	10.95
B	7.70	7.90
C	2.60	2.80
D	0.66	0.86
F	3.10	3.30
G	4.48	4.68
H	2.00	2.20
J	1.35	1.55
K	15.30	16.30
Q	3.70	3.90
R	0.40	0.60
V	1.17	1.37

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDW55	45	V
		BDW57	60	
		BDW59	100	
V_{CER}	Collector-Emitter Voltage R_{BE}= 1kΩ	BDW55	45	V
		BDW57	60	
		BDW59	100	
V_{CEO}	Collector-Emitter Voltage	BDW55	45	V
		BDW57	60	
		BDW59	80	
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current-Continuous		1.5	A
I_{CM}	Collector Current-Peak		3	A
P_C	Collector Power Dissipation @ T_C=25℃		12.5	W
T_J	Junction Temperature		150	℃
T_{stg}	Storage Temperature Range		-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	10	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance, Junction to Ambient	100	℃/W

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	BDW55	I_C= 10mA ;I_B=0	45			V
		BDW57		60			
		BDW59		80			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		I_C= 0.5A; I_B= 50mA			0.5	V
$V_{BE(on)}$	Base-Emitter On Voltage		I_C= 0.5A ; V_{CE}= 2V			1.0	V
I_{CBO}	Collector Cutoff Current		V_{CB}= V_{CBOmax};I_E= 0			0.1	μA
I_{CBO}	Collector Cutoff Current	BDW55	V_{CB}= 45V; I_E=0			10	μA
		BDW57	V_{CB}= 60V; I_E=0			10	
		BDW59	V_{CB}= 100V; I_E=0			10	
I_{EBO}	Emitter Cutoff Current		V_{EB}= 5V; I_C=0			10	μA
h_{FE-1}	DC Current Gain		I_C= 5mA ; V_{CE}= 2V	25			
h_{FE-2}	DC Current Gain		I_C= 150mA ; V_{CE}= 2V	40		250	
h_{FE-3}	DC Current Gain		I_C= 500mA ; V_{CE}= 2V	25			
f_T	Current-Gain—Bandwidth Product		I_C= 50mA ; V_{CE}= 5V;f_{test}= 35MHz		250		MHz
Switching times							
t_d	Delay Time		I_C= 0.15A; I_{B1}= -I_{B2}= 15mA; V_{CC}= 10.2V		30		ns
t_r	Rise Time				30		ns
t_{stg}	Storage Time				500		ns
t_f	Fall Time				80		ns

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