

INCHANGE Semiconductor

isc Product Specification

isc Silicon PNP Power Transistors

BDW56/58/60

DESCRIPTION

- Collector–Emitter Sustaining Voltage–
: $V_{CEO(SUS)} = -45V$ - BDW56
= $-60V$ - BDW58
= $-80V$ - BDW60
- Complement to Type BDW55/57/59

APPLICATIONS

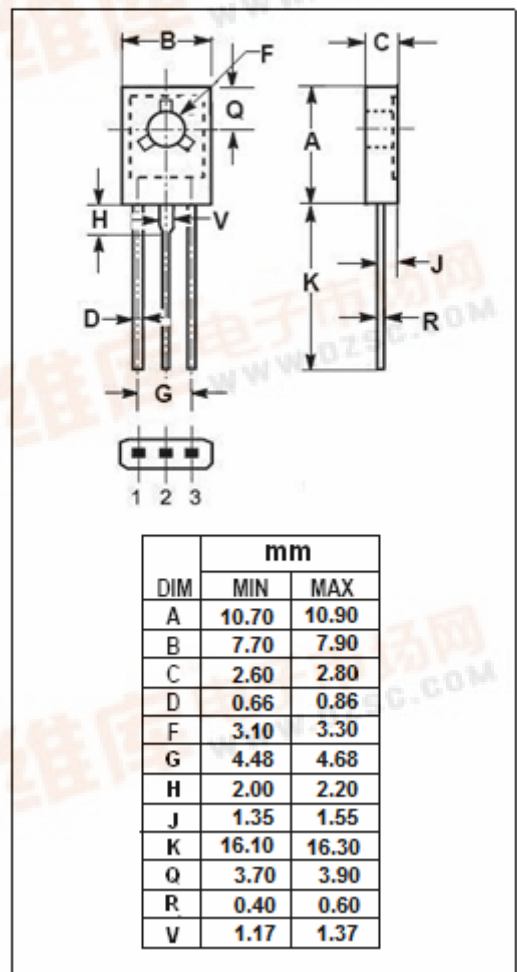
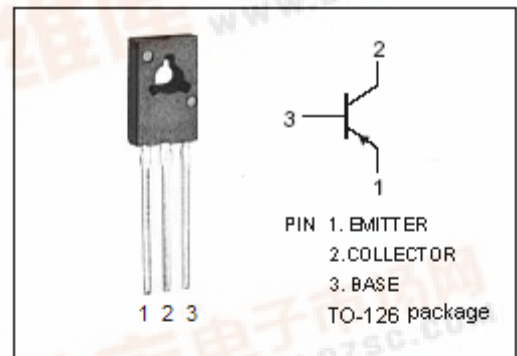
- Designed for use in professional equipment such as telecommunication and etc.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDW56	-45
		BDW58	-60
		BDW60	-100
V_{CER}	Collector-Emitter Voltage $R_{BE} = 1k\Omega$	BDW56	-45
		BDW58	-60
		BDW60	-100
V_{CEO}	Collector-Emitter Voltage	BDW56	-45
		BDW58	-60
		BDW60	-80
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current-Continuous	-1	A
I_{CM}	Collector Current-Peak	-1.5	A
P_C	Collector Power Dissipation @ $T_C=25^{\circ}C$	8	W
T_J	Junction Temperature	175	$^{\circ}C$
T_{stg}	Storage Temperature Range	-65~175	$^{\circ}C$

THERMAL CHARACTERISTICS

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



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	BDW56	$I_C = -10\text{mA}; I_B = 0$	-45		V	
		BDW58		-60			
		BDW60		-80			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -0.5\text{A}; I_B = -50\text{mA}$			-0.5	V	
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = -0.5\text{A}; V_{CE} = -2\text{V}$			-1.0	V	
I_{CBO}	Collector Cutoff Current	$V_{CB} = V_{CB0max}; I_E = 0$			-0.1	μA	
I_{CBO}	Collector Cutoff Current	BDW56			-10	μA	
		BDW58			$V_{CB} = -45\text{V}; I_E = 0; T_J = 150^\circ\text{C}$		-10
		BDW60			$V_{CB} = -70\text{V}; I_E = 0; T_J = 150^\circ\text{C}$		-10
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -5\text{V}; I_C = 0$			-10	μA	
h_{FE-1}	DC Current Gain	$I_C = -5\text{mA}; V_{CE} = -2\text{V}$	25				
h_{FE-2}	DC Current Gain	$I_C = -150\text{mA}; V_{CE} = -2\text{V}$	40		250		
h_{FE-3}	DC Current Gain	$I_C = -500\text{mA}; V_{CE} = -2\text{V}$	25				
f_T	Current-Gain—Bandwidth Product	$I_C = -50\text{mA}; V_{CE} = -5\text{V}; f_{test} = 35\text{MHz}$		75		MHz	

Switching times

t_d	Delay Time	$I_C = 0.15\text{A}; I_{B1} = -I_{B2} = 15\text{mA}; V_{CC} = 10.2\text{V}$		30		ns
t_r	Rise Time			40		ns
t_{stg}	Storage Time			500		ns
t_f	Fall Time			80		ns