

isc Silicon NPN Darlington Power Transistor

BDW63/A/B/C/D

DESCRIPTION

- Collector Current $-I_C = 6A$
- High DC Current Gain $-h_{FE} = 750(\text{Min.}) @ I_C = 2A$
- Complement to Type BDW64/A/B/C/D

APPLICATIONS

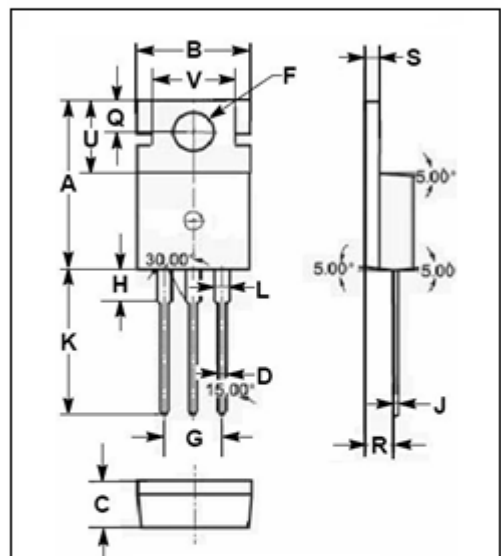
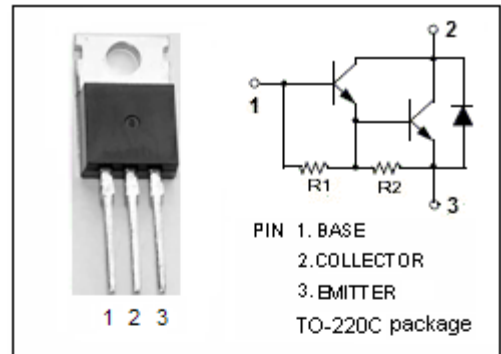
- Designed for audio output stages and general amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT	
V_{CBO}	Collector-Base Voltage	BDW63	45	V
		BDW63A	60	
		BDW63B	80	
		BDW63C	100	
		BDW63D	120	
V_{CEO}	Collector-Emitter Voltage	BDW63	45	V
		BDW63A	60	
		BDW63B	80	
		BDW63C	100	
		BDW63D	120	
V_{EBO}	Emitter-Base Voltage	5	V	
I_C	Collector Current-Continuous	6	A	
I_B	Base Current-Continuous	0.1	A	
P_C	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	2	W	
	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	60		
T_J	Junction Temperature	150	$^\circ\text{C}$	
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	2.08	$^\circ\text{C/W}$
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	62.5	$^\circ\text{C/W}$



DIM	mm	
	MIN	MAX
A	15.70	15.90
B	9.90	10.10
C	4.20	4.40
D	0.70	0.90
F	3.40	3.60
G	4.98	5.18
H	2.70	2.90
J	0.44	0.46
K	13.20	13.40
L	1.10	1.30
Q	2.70	2.90
R	2.50	2.70
S	1.29	1.31
U	6.45	6.65
V	8.66	8.86

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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	BDW63	$I_C=30\text{mA}; I_B=0$			V
		BDW63A				
		BDW63B				
		BDW63C				
		BDW63D				
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=12\text{mA}$			2.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=60\text{mA}$			4.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=2\text{A}; V_{CE}=3\text{V}$			2.5	V
V_{ECF}	C-E Diode Forward Voltage	$I_F=6\text{A}$			3.5	V
I_{CEO}	Collector Cutoff Current	BDW63	$V_{CE}=30\text{V}; I_B=0$			0.5
		BDW63A				
		BDW63B				
		BDW63C				
		BDW63D				
I_{CBO}	Collector Cutoff Current	BDW63	$V_{CE}=30\text{V}; I_B=0$			0.2 5.0
		BDW63A				
		BDW63B				
		BDW63C				
		BDW63D				
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			2.0	mA
h_{FE-1}	DC Current Gain	$I_C=2\text{A}; V_{CE}=3\text{V}$	750		20000	
h_{FE-2}	DC Current Gain	$I_C=6\text{A}; V_{CE}=3\text{V}$	100			
Switching times						
t_{on}	Turn-on Time	$I_C=3\text{A}; I_{B1}=-I_{B2}=12\text{mA}; V_{BE(off)}=-4.5\text{V}, R_L=10\Omega$		1.0		μs
t_{off}	Turn-off Time			5.0		μs