

BD743 – A – B – C

SILICON POWER TRANSISTORS

The BD743 series are NPN power transistors in a TO-220 envelope.
 They are intended for use in power linear and switching application.
 High current capability and high power dissipation.
 PNP complements are BD744-A-B-C
 Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E=0$)	BD743	50	V
		BD743A	70	
		BD743B	900	
		BD743C	110	
V_{CEO}	Collector-Emitter Voltage ($I_B=0$)	BD743	45	V
		BD743A	60	
		BD743B	80	
		BD743C	100	
V_{EBO}	Emitter-Base Voltage ($I_C=0$)	BD743	5	V
		BD743A		
		BD743B		
		BD743C		
I_C	Collector Current	BD743	15	A
		BD743A		
		BD743B		
		BD743C		
I_{CM}	Collector Peak Current	BD743	20	A
		BD743A		
		BD743B		
		BD743C		
I_B	Base Current	BD743	5	A
		BD743A		
		BD743B		
		BD743C		
P_T	Power Dissipation	$T_C = 25^\circ\text{C}$	90	W
		$T_A = 25^\circ\text{C}$	2	
T_J	Junction Temperature		150	$^\circ\text{C}$
T_s	Storage Temperature range		-65 to +150	

BD743 – A – B – C

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-MB}	Junction To Case Thermal Resistance	1.4	°C/W
R_{thJ-A}	Junction To Free Air Thermal Resistance	62.5	°C/W

ELECTRICAL CHARACTERISTICS

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

Symbol	Ratings	Test Condition(s)			Min	Typ	Max	Unit
I_{CBO}	Collector Cutoff Current	$V_{BE}=0$ $V_{CB}=50\text{ V}$	$T_C=25^{\circ}\text{C}$	BD743	-	-	0.1	mA
		$V_{BE}=0$ $V_{CB}=70\text{ V}$		BD743A				
		$V_{BE}=0$ $V_{CB}=90\text{ V}$		BD743B				
		$V_{BE}=0$ $V_{CB}=100\text{ V}$		BD743C				
		$V_{BE}=0$ $V_{CB}=50\text{ V}$	$T_C=125^{\circ}\text{C}$	BD743	-	-	5	mA
		$V_{BE}=0$ $V_{CB}=70\text{ V}$		BD743A				
		$V_{BE}=0$ $V_{CB}=90\text{ V}$		BD743B				
		$V_{BE}=0$ $V_{CB}=100\text{ V}$		BD743C				
I_{CEO}	Collector Cutoff Current	$I_B=0$ $V_{CE}=30\text{ V}$		BD743	-	-	0.1	mA
				BD743A				
		$I_B=0$ $V_{CE}=60\text{ V}$		BD743B				
				BD743C				
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{ V}, I_C=0$		BD743	-	-	0.5	mA
				BD743A				
				BD743B				
				BD743C				
V_{CEO}	Collector-Emitter Breakdown Voltage (*)	$I_C=30\text{ mA}, I_B=0$		BD743	45	-	-	V
				BD743A	60	-	-	
				BD743B	80	-	-	
				BD743C	100	-	-	

BD743 – A – B – C

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings			Value			Unit
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C= 5\text{ A}, I_B= 500\text{ mA}$	BD743	-	-	1	V
			BD743A				
			BD743B				
			BD743C				
		$I_C= 15\text{ A}, I_B=5\text{ A}$	BD743	-	-	3	
			BD743A				
			BD743B				
			BD743C				
$V_{BE(on)}$	Base-Emitter Voltage (*)	$I_C= 5\text{ A}, V_{CE}= 4\text{ V}$	BD743	-	-	1	V
			BD743A				
			BD743B				
			BD743C				
		$I_C= 15\text{ A}, V_{CE}= 4\text{ V}$	BD743	-	-	3	V
			BD743A				
			BD743B				
			BD743C				
h_{FE}	DC Current Gain (*)	$I_C= 1\text{ A}, V_{CE}= 4\text{ V}$	BD743	40	-	-	-
			BD743A				
			BD743B				
			BD743C				
		$I_C= 5\text{ A}, V_{CE}= 4\text{ V}$	BD743	20	-	150	
			BD743A				
			BD743B				
			BD743C				
		$I_C= 15\text{ A}, V_{CE}= 4\text{ V}$	BD743	5	-	-	
			BD743A				
			BD743B				
			BD743C				

SWITCHING TIMES

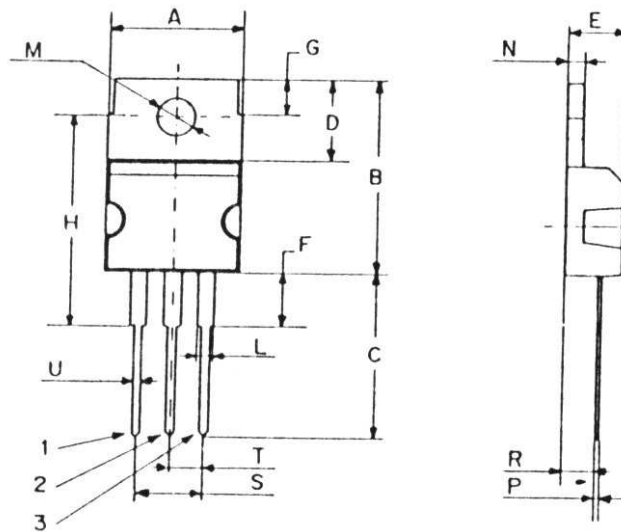
Symbol	Ratings	Test Condition(s)	Value			Unit
			Min	Typ	Max	
t_d	Delay time	$I_C = 5\text{ A}, V_{be} = -4.2\text{ V}$ $I_{B(on)} = -I_{B(off)} = 0.5\text{ A}$ $R_L = 6\ \Omega, t_p = 20\mu\text{s}$	-	20	-	ns
t_r	Rise time		-	350	-	
t_s	Storage time		-	500	-	
t_f	Fall time		-	400	-	

(*) Pulse Width $\approx 300\ \mu\text{s}$, Duty Cycle $\angle 2.0\%$

BD743 – A – B – C

MECHANICAL DATA CASE TO-220

DIMENSIONS (mm)		
	Min.	Max.
A	9,90	10,30
B	15,65	15,90
C	13,20	13,40
D	6,45	6,65
E	4,30	4,50
F	2,70	3,15
G	2,60	3,00
H	15,75	17,15
L	1,15	1,40
M	3,50	3,70
N	-	1,37
P	0,46	0,55
R	2,50	2,70
S	4,98	5,08
T	2,49	2,54
U	0,70	0,90



Pin 1 :	Base
Pin 2 :	Collector
Pin 3 :	Emitter
Package	Collector

Revised August 2012

Information furnished is believed to be accurate and reliable. However, Comset Semiconductors assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may results from its use. Data are subject to change without notice. Comset Semiconductors makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Comset Semiconductors assume any liability arising out of the application or use of any product and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Comset Semiconductors' products are not authorized for use as critical components in life support devices or systems.