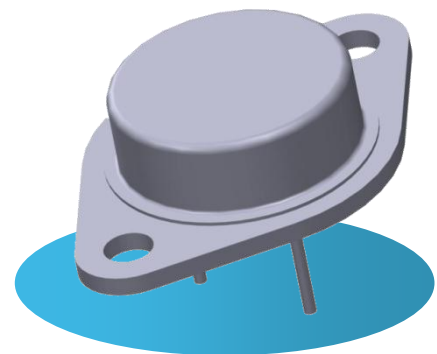


Power and Hybrid

NPN EPITAXIAL BASE

DARLINGTON POWER TRANSISTOR

BDX63 / BDX63A / BDX63B / BDX63C



- Hermetic TO3 Metal Package
- Ideally Suited for General Purpose Switching and Amplifier Applications
- Screening Options Available

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise stated)

		BDX63	BDX63A	BDX63B	BDX63C
V _{CEO}	Drain – Source Voltage	60V	80V	100V	120V
V _{CB0}	Gate – Source Voltage	80V	100V	120V	140V
V _{EBO}	Continuous Drain Current, Per Device			5V	
I _C	Collector Current			8A	
I _{CM}	Collector Current (peak)			12A	
I _B	Base Current			150mA	
P _{tot}	Total Power Dissipation @ T _C = 25°C			90W	
T _J	Junction Temperature Range			-55 to +200°C	
T _{stg}	Storage Temperature Range			-65 to +200°C	

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
R _{θJC}	Thermal Resistance, Junction To Case	1.94	°C/W

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.



Semelab Limited

Coventry Road, Lutterworth, Leicestershire, LE17 4JB

Document Number: 10935

Telephone: +44 (0) 1455 556565
Fax: +44 (0) 1455 552612

Email: sales@semelab-tt.com

Website: <http://www.semelab-tt.com>

Issue: 1
Page: 1 of 3

NPN EPITAXIAL BASE DARLINGTON POWER TRANSISTOR BDX63 / BDX63A / BDX63B / BDX63C



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
I_{CBO}	Collector – Base Cut-Off Current	$I_E = 0$ $V_{CB} = V_{CE0max}$			0.2	mA
		$I_E = 0$ $V_{CB} = \frac{1}{2}V_{CBOmax}$ $T_A = 150^\circ\text{C}$			2	
I_{CEO}	Collector – Emitter Cut-Off Current	$I_B = 0$ $V_{CE} = \frac{1}{2}V_{CE0max}$			0.5	
I_{EBO}	Emitter – Base Cut-Off Current	$I_C = 0$ $V_{EB} = 5V$			5	
$h_{FE}^{(1)}$	DC Current Gain	$I_C = 0.5A$ $V_{CE} = 3V$		1475		-
		$I_C = 3A$ $V_{CE} = 3V$	1000			
		$I_C = 8A$ $V_{CE} = 3V$		5200		
$V_{BE}^{(1)}$	Base – Emitter Voltage	$I_C = 3A$ $V_{CE} = 3V$			2.5	V
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage	$I_C = 3A$ $I_B = 12mA$			2	
V_F	Diode, Forward Voltage	$I_F = 3A$		0.86		

DYNAMIC CHARACTERISTICS

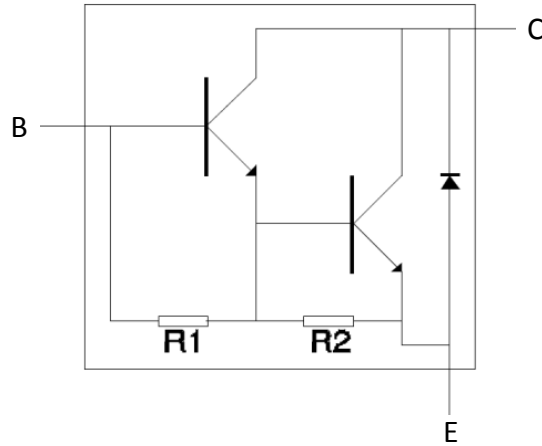
C_{OBO}	Output Capacitance	$I_E = 0$ $V_{CB} = 10V$ $f = 1.0MHz$		150		pF
$f_{hfe}^{(2)}$	Cut-Off Frequency	$I_C = 3A$ $V_{CE} = 3V$		100		kHz
$ h_{fe} ^{(2)}$	Small Signal Current Gain	$I_C = 3A$ $V_{CE} = 3V$ $f = 1.0MHz$		100		-

Notes

- (1) Pulse Width $\leq 380\mu s$, $\delta \leq 2\%$
(2) Not a Production Test, By Design Only

NPN EPITAXIAL BASE DARLINGTON POWER TRANSISTOR BDX63 / BDX63A / BDX63B / BDX63C

CIRCUIT DIAGRAM

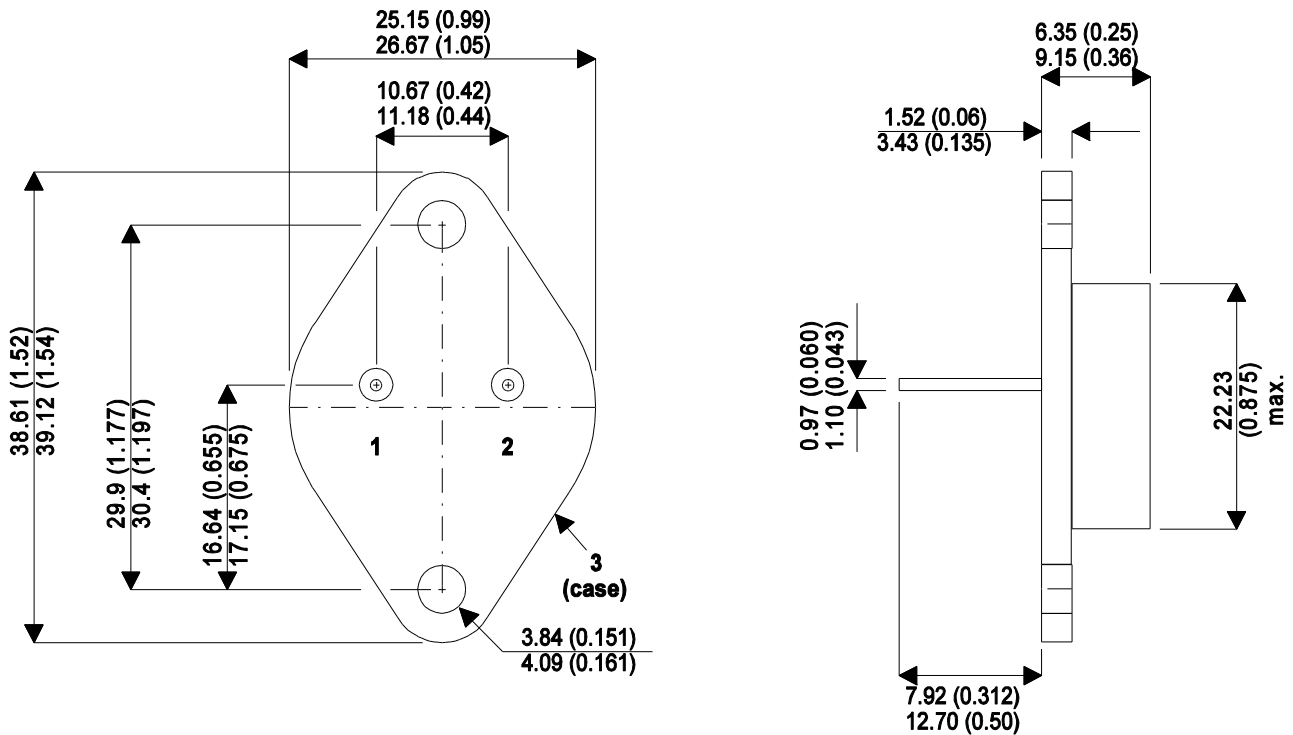


R1 typically $8k\Omega$
R2 typically 100Ω

Monolithic semiconductor device comprising of one chip

MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AA) METAL PACKAGE Underside View

Pin 1 - Base

Pin 2 - Emitter

Case - Collector