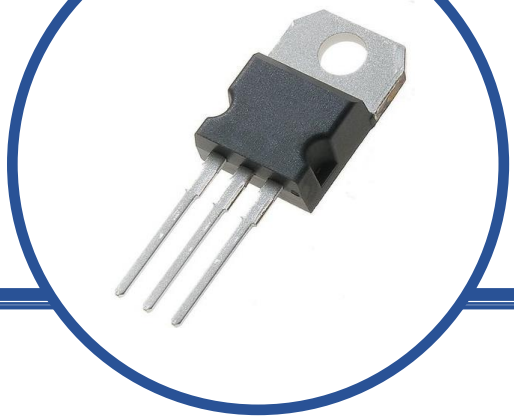
SILICON NPN POWER DARLINGTON TRANSISTOR

BDT63CX-MAG.R

- NPN Epitaxial base transistor
- Monolithic Darlington circuit
- Applications include audio output stages, general purposes amplifiers and switching

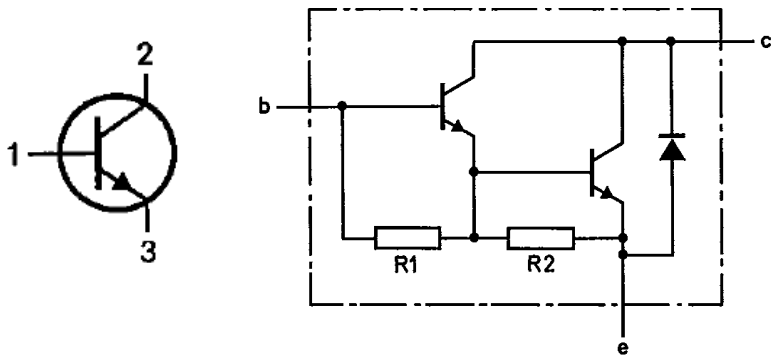


ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise stated)

			Unit
V_{CBO}	Collector-Base Voltage	115	V
V_{CEO}	Collector-Emitter Voltage	115	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current (DC)	10	A
I_{CM}	Collector Current (Peak)	15	A
I_B	Base Current (DC)	250	mA
P_D	Total Device Dissipation	90	W
T_J	Junction Temperature	150	°C
T_{stg}	Storage Temperature	-65 to 150	°C

SCHEMATIC

And equivalent circuit



R1 typ. 8 kΩ
R2 typ. 100 Ω

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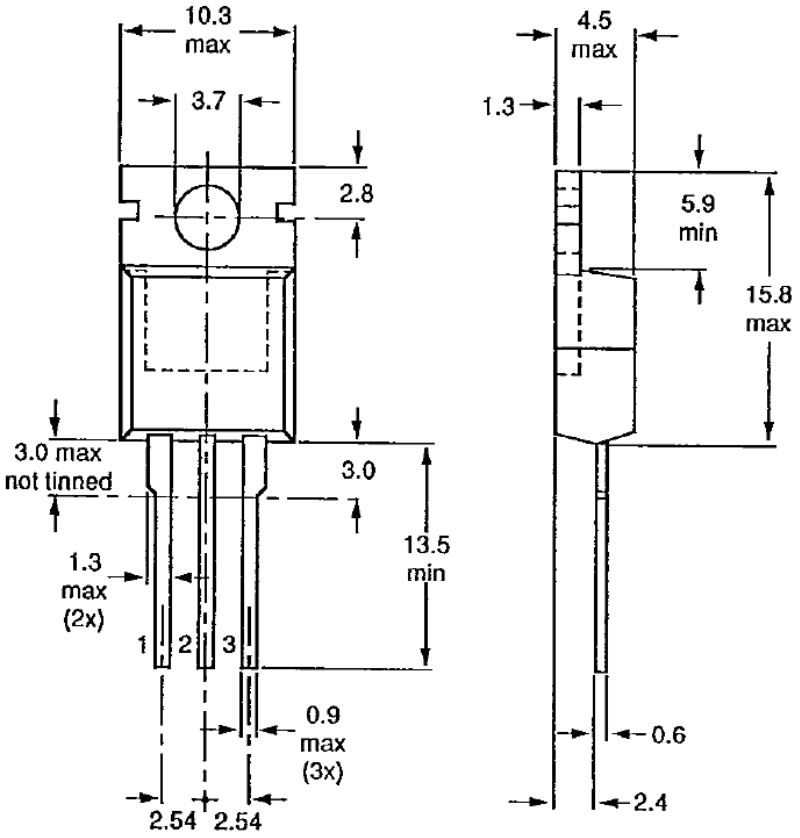
ELECTRICAL CHARACTERISTICS (T_j = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions		Min	Typ	Max	Units
I_{CBO}	Collector cut-off Current	$V_{CB} = V_{CBOmax}$	$I_E = 0$			0.2	mA
		$V_{CB} = ½ V_{CBOmax}$	$I_E = 0$ T_j = 150°C			2.0	
I_{CEO}	Collector cut-off Current	$V_{CE} = ½ V_{CEOmax}$	$I_B = 0$			0.5	
I_{EBO}	Emitter cut-off Current	$V_{EB} = 5V$	$I_C = 0$			5.0	
$I_{(SB)}$	Forward bias second breakdown collector current	V_{CE} = 60V (without heatsink)	$I_E = 0$ t = 0.1s	1.5			A
h_{FE}	DC Current Gain	I_C = 3A	V_{CE} = 3V	1000			
		I_C = 10A			3000		
V_{BE}	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	
		I_C = 8A	I_B = 80mA			2.5	
V_F	Forward Voltage	I_F = 3A				2	
C_{ob}	Collector Capacitance	V_{CB} = 10V	$I_E = I_e = 0$		100		pF
t_{on}	Switching times	I_{Con} = 3A			1.0	2.5	µs
t_{off}		$I_{Bon} = -I_{Boff}$ = 12mA			5.0	10.0	
h_{fe}	Small signal current gain	I_C = 3A; V_{CE} = 3V; f = 1MHz		25			

MECHANICAL

Dimensions in mm



Package Type TO220