Dual Operational Amplifier with Darlington Input

TBB 2331/B
TBC 2332
TBE 2335/B

An economical and universal operational amplifier which by its excellent performance qualities is well suited for a wide range of applications such as measurement- and servo-systems, automobile electronics, AF-circuits, analog computers etc. The low input current of this amplifier is particulary advantageous in measurement- and servo system applications. In addition to a high gain, low offset voltage, small temperature- and supply voltage-dependence, the amplifier features

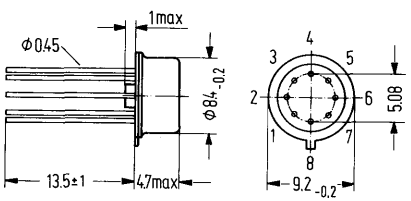
- High input resistance
- Wide common-mode range
- Large supply voltage range
- Large control range
- High output current

Type	Ordering codes
TBB 2331	Q67000-A1161
TBB 2331 B	Q67000-A1162
TBC 2332	Q67000-A1163
TBE 2335	Q67000-A1164
TBE 2335 B	Q67000-A1165

For single amplifier performance, see TCA 331 data sheet. TBB 2331 B and TBE 2335 B (8 pins) in plastic plug-in package

Package outlines

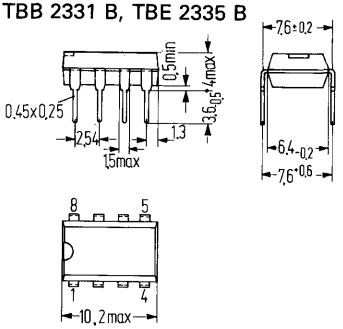
TBB 2331, TBC 2332
TBE 2335



Case similar to 5 G 8 DIN 41873 (TO-99)
Weight approx. 1.2 g

Dimensions in mm

TBB 2331 B, TBE 2335 B



Plastic plug-in package, 8 pins
20 A 8 DIN 41866
Weight approx. .7 g

Maximum ratings

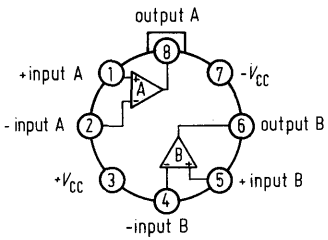
		TBB 2331/B TBC 2332 TBE 2335/B	
Supply voltage	V_{cc}	±15	V
Output current	I_q	70	mA
Differential input voltage V_{cc} = ±13 to ±15 V	V_{iD}	±13	V
Differential input voltage V_{cc} = ±2 to ±13 V	V_{iD}	$\pm V_{cc}$	
Junction temperature	T_j	150	°C
Storage temperature	T_s	−55 to +125	°C
Thermal resistance:			
System-case (TBB 2331, TBC 2332, TBB 2335)	$R_{thScase}$	80	K/W
System-ambient air (TBB 2331, TBC 2332, TBB 2335)	R_{thSamb}	190	K/W
System-ambient air (TBB 2331 B, TBE 2335 B)	R_{thSamb}	140	K/W

Range of operation

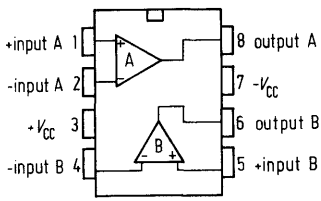
Supply voltage	V_{cc}	±2 to ±15	V
Ambient temperature in operation			
TBB 2331/B	T_{amb}	0 to +70	°C
TBE 2335/B	T_{amb}	−25 to +85	°C
TBC 2332	T_{amb}	−55 to +125	°C

Pin connection

TBB 2331
TBC 2332
TBE 2335



TBB 2331 B
TBE 2335 B



Equivalent circuit