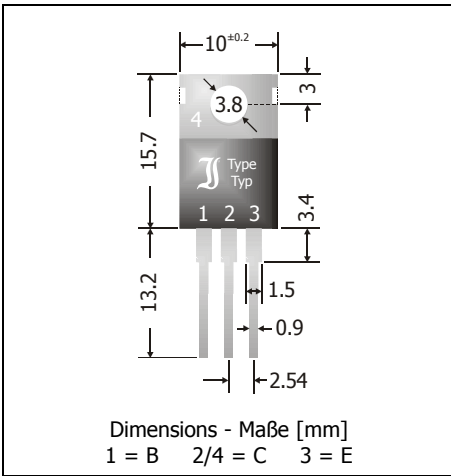


TIP32 ... TIP32C
General Purpose Silicon Power Transistors
Silizium Leistungs-Transistoren für universellen Einsatz

PNP

PNP

Version 2006-07-18



Max. power dissipation with cooling
 Max. Verlustleistung mit Kühlung 40 W

Collector current
 Kollektorstrom 3 A

Plastic case
 Kunststoffgehäuse TO-220AB

Weight approx.
 Gewicht ca. 2.2 g

Plastic material has UL classification 94V-0
 Gehäusematerial UL94V-0 klassifiziert

Standard packaging in tubes
 Standard Lieferform in Stangen



Maximum ratings (T_A = 25°C)

Grenzwerte (T_A = 25°C)

			TIP32	TIP32A	TIP32B	TIP32C
Collector-Emitter-voltage	B open	- V _{CEO}	40 V	60 V	80 V	100 V
Collector-Emitter-voltage	E open	- V _{CES}	40 V	60 V	80 V	100 V
Emitter-Base-voltage	C open	- V _{EBO}	5 V			
Power dissipation – Verlustleistung						
without cooling – ohne Kühlung	T _A = 25°C	P _{tot}	2 W ¹⁾			
with cooling – mit Kühlung	T _C = 25°C	P _{tot}	40 W			
Collector current – Kollektorstrom (dc)		- I _C	3 A			
Peak Collector current – Kollektor-Spitzenstrom		- I _{CM}	5 A			
Base current – Basisstrom		- I _B	1 A			
Junction temperature – Sperrschichttemperatur		T _j	-55...+150°C			
Storage temperature – Lagerungstemperatur		T _s	-55...+150°C			

Characteristics (T_j = 25°C)

Kennwerte (T_j = 25°C)

		Min.	Typ.	Max.
DC current gain – Kollektor-Basis-Stromverhältnis ²⁾				
- V _{CE} = 4 V, - I _C = 1 A	h _{FE}	25	–	–
- V _{CE} = 4 V, - I _C = 3 A	h _{FE}	10	–	50
Collector-Emitter saturation volt. – Kollektor-Emitter-Sättigungsspg. ²⁾				
- I _C = 3 A, - I _B = 375 mA	- V _{CEsat}	–	–	1.2 V
Base-Emitter voltage – Basis-Emitter-Spannung ²⁾				
- V _{CE} = 4 V, - I _C = 3 A	- V _{BE}	–	–	1.8 V

1 Valid, if leads are kept at ambient temperature at a distance of 5 mm from case
 Gültig wenn die Anschlussdrähte in 5 mm Abstand vom Gehäuse auf Umgebungstemperatur gehalten werden

2 Tested with pulses t_p = 300 µs, duty cycle ≤ 2% – Gemessen mit Impulsen t_p = 300 µs, Schaltverhältnis ≤ 2%

Characteristics (T_j = 25°C)
Kennwerte (T_j = 25°C)

			Min.	Typ.	Max.
Collector-Emitter cutoff current – Kollektor-Emitter-Reststrom					
- V _{CE} = 30 V (B open)	TIP32	- I _{CE0}	–	–	300 nA
	TIP32A	- I _{CE0}	–	–	300 nA
- V _{CE} = 60 V (B open)	TIP32B	- I _{CE0}	–	–	300 nA
	TIP32C	- I _{CE0}	–	–	300 nA
- V _{CE} = 40 V (B-E short)	TIP32	- I _{CES}	–	–	200 nA
	TIP32A	- I _{CES}	–	–	200 nA
- V _{CE} = 80 V (B-E short)	TIP32B	- I _{CES}	–	–	200 nA
	TIP32C	- I _{CES}	–	–	200 nA
Emitter-Base cutoff current					
- V _{EB} = 5 V, (C open)		- I _{EB0}	–	–	1 mA
Gain-Bandwidth Product – Transitfrequenz					
- V _{CE} = 10 V, - I _C = 0.5 A, f = 1 MHz		f _T	3 MHz	–	–
Small signal current gain – Kleinsignal-Stromverstärkung					
- V _{CE} = 10 V, - I _C = 0.5 A, f = 1 kHz		h _{fe}	20	–	–
	- V _{CE} = 10 V, - I _C = 0.5 A, f = 1 MHz		h _{fe}	3	–
Switching times – Schaltzeiten (between 10% and 90% levels)					
turn-on time	- I _{Con} = 1 A	t _{on}	–	300 ns	–
turn-off time	- I _{Bon} = I _{Boff} = 100 mA	t _{off}	–	1 μs	–
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft		R _{thA}	< 63 K/W ¹⁾		
Thermal resistance junction to case Wärmewiderstand Sperrschicht – Gehäuse		R _{thC}	< 3 K/W		
Admissible torque for mounting Zulässiges Anzugsdrehmoment		M4	9 ± 10% lb.in. 1 ± 10% Nm		
Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren			TIP31 ... TIP31C		

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 Gültig wenn die Anschlussdrähte in 5 mm Abstand vom Gehäuse auf Umgebungstemperatur gehalten werden