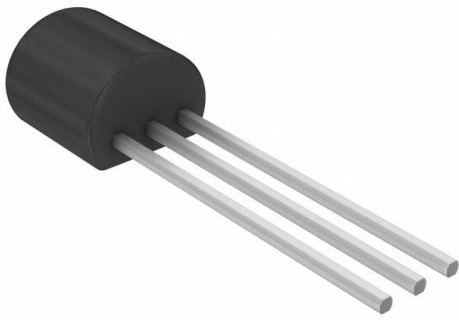


ZTX948STOB Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	ZTX948STOB-DG
Manufacturer	Diodes Incorporated
Manufacturer Product Number	ZTX948STOB
Description	TRANS PNP 20V 4.5A E-LINE
Detailed Description	Bipolar (BJT) Transistor PNP 20 V 4.5 A 80MHz 1.2 W Through Hole E-Line (TO-92 compatible)



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.

Purchase and inquiry

Manufacturer Product Number:

ZTX948STOB

Series:

-

Transistor Type:

PNP

Voltage - Collector Emitter Breakdown (Max):

20 V

Current - Collector Cutoff (Max):

50nA (ICBO)

Power - Max:

1.2 W

Operating Temperature:

-55°C ~ 200°C (TJ)

Package / Case:

E-Line-3

Base Product Number:

ZTX948

Manufacturer:

Diodes Incorporated

Product Status:

Obsolete

Current - Collector (Ic) (Max):

4.5 A

Vce Saturation (Max) @ Ib, Ic:

310mV @ 300mA, 5A

DC Current Gain (hFE) (Min) @ Ic, Vce:

100 @ 1A, 1V

Frequency - Transition:

80MHz

Mounting Type:

Through Hole

Supplier Device Package:

E-Line (TO-92 compatible)

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.29.0075

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

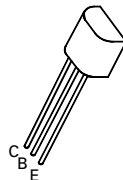
PNP SILICON PLANAR MEDIUM POWER HIGH CURRENT TRANSISTOR

ZTX948

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FEATURES

- * 4.5 Amps continuous current
- * Up to 20 Amps peak current
- * Very low saturation voltage
- * Excellent gain up to 20 Amps
- * Very low leakage
- * Exceptional gain linearity down to 10mA
- * Spice model available



**E-Line
TO92 Compatible**

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-20	V
Emitter-Base Voltage	V_{EBO}	-6	V
Peak Pulse Current	I_{CM}	-20	A
Continuous Collector Current	I_C	-4.5	A
Practical Power Dissipation*	P_{totp}	1.58	W
Power Dissipation at $T_{amb}=25^{\circ}C$	P_{tot}	1.2	W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +200	$^{\circ}C$

*The power which can be dissipated assuming the device is mounted in a typical manner on a P.C.B. with copper equal to 1 inch square minimum

ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ unless otherwise stated)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-40	-55		V	$I_C = -100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	-40	-55		V	$I_C = -1\mu A, R_B \leq 1K\Omega$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-20	-30		V	$I_C = -10mA^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-6	-8		V	$I_E = -100\mu A$
Collector Cut-Off Current	I_{CBO}			-50 -1	nA μA	$V_{CB} = -30V$ $V_{CB} = -30V, T_{amb} = 100^{\circ}C$
Collector Cut-Off Current	I_{CER} $R \leq 1K\Omega$			-50 -1	nA μA	$V_{CB} = -30V$ $V_{CB} = -30V, T_{amb} = 100^{\circ}C$
Emitter Cut-Off Current	I_{EBO}			-10	nA	$V_{EB} = -6V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-45 -90 -180 -230	-100 -150 -250 -310	mV mV mV mV	$I_C = -0.5A, I_B = -10mA^*$ $I_C = -2A, I_B = -200mA^*$ $I_C = -4A, I_B = -400mA^*$ $I_C = -5A, I_B = -300mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-960	-1100	mV	$I_C = -5A, I_B = -300mA^*$

ZTX948

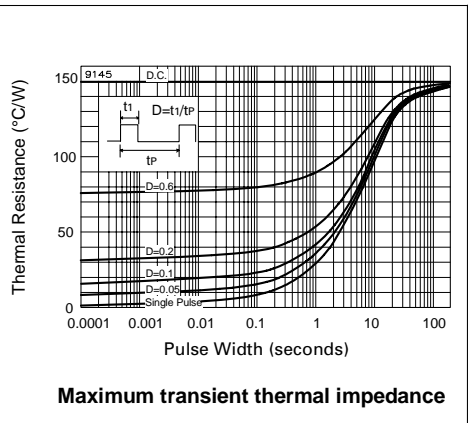
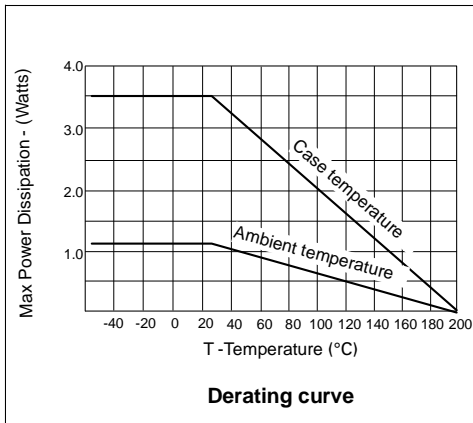
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-860	-1000	mV	$I_C = -5A, V_{CE} = -1V^*$
Static Forward Current Transfer Ratio	h_{FE}	100 100 75 60 15	200 200 160 130 40	300		$I_C = -10mA, V_{CE} = -1V$ $I_C = -1A, V_{CE} = -1V^*$ $I_C = -5A, V_{CE} = -1V^*$ $I_C = -10A, V_{CE} = -1V^*$ $I_C = -20A, V_{CE} = -1V^*$
Transition Frequency	f_T		80		MHz	$I_C = -100mA, V_{CE} = -10V$ $f = 50MHz$
Output Capacitance	C_{obo}		163		pF	$V_{CE} = -10V, f = 1MHz$
Switching Times	t_{on} t_{off}		120 126		ns ns	$I_C = -4A, I_{B1} = -400mA$ $I_{B2} = -400mA, V_{CC} = -10V$

*Measured under pulsed conditions. Pulse width=300 μ s. Duty cycle \leq 2%

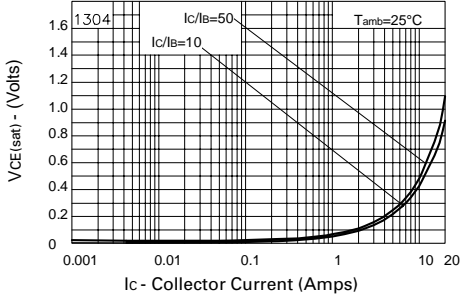
THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance: Junction to Ambient	$R_{th(j-amb)}$	150	$^{\circ}\text{C/W}$
Junction to Case	$R_{th(j-case)}$	50	$^{\circ}\text{C/W}$

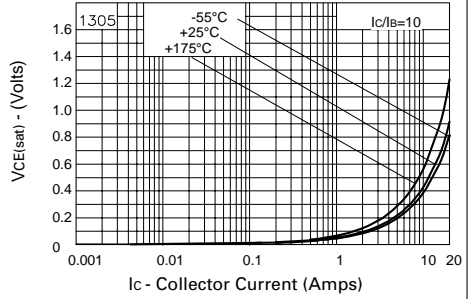


ZTX948

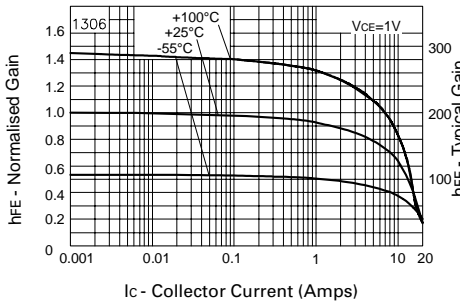
TYPICAL CHARACTERISTICS



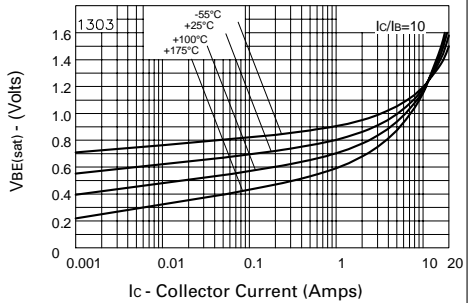
$V_{CE(sat)}$ v I_C



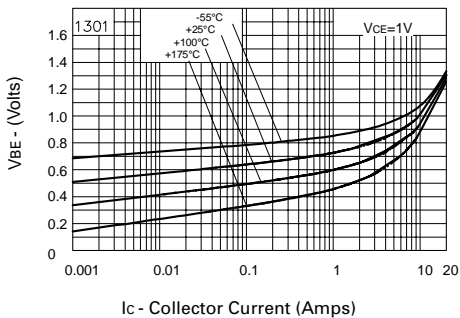
$V_{CE(sat)}$ v I_C



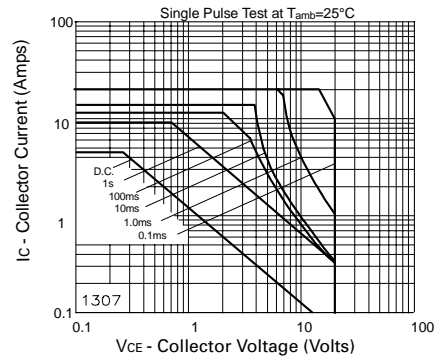
h_{FE} v I_C



$V_{BE(sat)}$ v I_C



$V_{BE(on)}$ v I_C



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