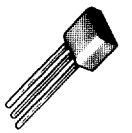
PNP Silicon Planar Medium Power High Voltage Transistors

ZTX754 ZTX755

FEATURES

- 1.5W power dissipation at $T_{amb} = 25°C$*
- 1A continuous I_C
- Guaranteed h_{FE} specified up to 1A
- Voltages up to 150V
- Low saturation voltages
- Complementary types



Plastic E-Line
(TO-92 Compatible)

DESCRIPTION

These plastic encapsulated, medium power transistors are designed for applications requiring high breakdown voltages and low saturation voltages.

The E-line package is formed by transfer moulding a silicone plastic specially selected to provide a rugged one-piece encapsulation resistant to severe environments and allow the high junction temperature operation normally associated with metal can devices.

E-line encapsulated devices are approved for use in military, industrial and professional equipments.

Alternative lead configurations are available as plug-in replacements of TO-5/39 and TO-18 metal can types, and for surface mounting. Also available on tape for automatic handling.

Complementary to ZTX654 and ZTX655.

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	ZTX754	ZTX755	Unit
Collector-base voltage	V_{CBO}	−125	−150	V
Collector-emitter voltage	V_{CEO}	−125	−150	V
Emitter-base voltage	V_{EBO}	−5		V
Peak collector current (see note below)	I_{CM}	−2		A
Continuous collector current	I_C	−1		A
Practical power dissipation*	P_{totP}	1.5		W
Power dissipation : at $T_{amb} = 25°C$ derate above 25°C	P_{tot}	1 5.7		W mW/°C
Operating and storage temperature range	$t_j : t_{stg}$	−55 to +200		°C

Note: Consult Safe Operating Area graph for conditions.

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

ZTX754 ZTX755

CHARACTERISTICS (at $T_{amb} = 25°C$ unless otherwise stated).

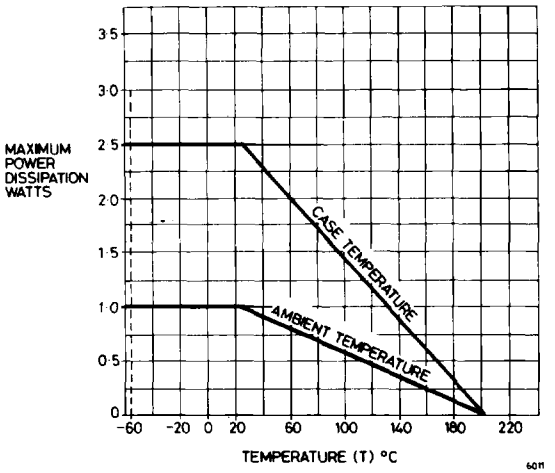
Parameter	Symbol	ZTX754		ZTX755		Unit	Conditions
		Min.	Max.	Min.	Max.		
Collector-base breakdown voltage	$V_{(BR)CBO}$	−125	−	−150	−	V	$I_C = -100\mu A$
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	−125	−	−150	−	V	$I_C = -10mA$
Emitter-base breakdown voltage	$V_{(BR)EBO}$	−5	−	−5	−	V	$I_E = -100\mu A$
Collector cut-off current	I_{CBO}	−	−100	−	−	nA	$V_{CB} = -100V$
		−	−	−	−100	nA	$V_{CB} = -125V$
Emitter cut-off current	I_{EBO}	−	−100	−	−100	nA	$V_{EB} = -3V$
Collector-emitter saturation voltage	$V_{CE(SAT)}$	−	−0.5	−	−0.5	V	$I_C = -500mA$, $I_B = -50mA$*
		−	−0.5	−	−0.5	V	$I_C = -1A$, $I_B = -200mA$*
Base-emitter saturation voltage	$V_{BE(SAT)}$	−	−1.1	−	−1.1	V	$I_C = -500mA$, $I_B = -50mA$*
Static forward current transfer ratio	h_{FE}	50	−	50	−		$I_C = -10mA$, $V_{CE} = -5V$
		50	−	50	−		$I_C = -500mA$, $V_{CE} = -5V$*
		20	−	20	−		$I_C = -1A$, $V_{CE} = -5V$*
Base-emitter turn on voltage	$V_{BE(ON)}$	−	−1	−	−1	V	$I_C = -500mA$, $V_{CE} = -5V$*
Transition frequency	f_T	30	−	30	−	MHz	$I_C = -10mA$, $V_{CE} = -20V$ f = 20MHz
Output capacitance	C_{obo}	−	20	−	20	pF	$V_{CB} = -20V$, f = 1MHz

*Measured under pulsed conditions. Pulse width = 300μs. Duty cycle ⩽ 2%.

THERMAL CHARACTERISTICS

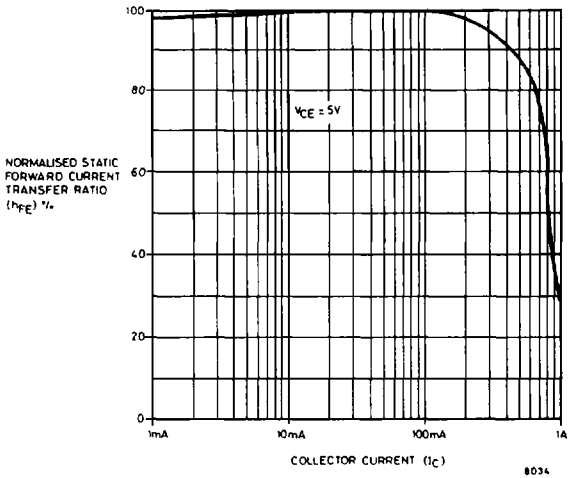
Parameter		Symbol	Maximum	Unit
Thermal resistance:	Junction to ambient$_1$	$R_{th(j-amb)1}$	175	°C/W
	Junction to ambient$_2$	$R_{th(j-amb)2}$†	116	°C/W
	Junction to case	$R_{th(j-case)}$	70	°C/W

†Device mounted on P.C.B. with copper equal to 1 sq.inch minimum.

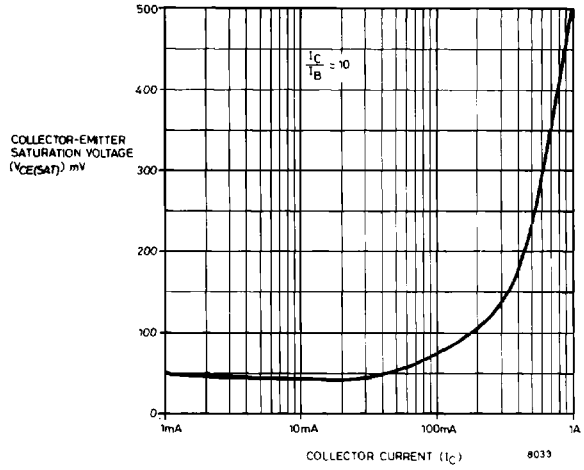


Dissipation derating curve

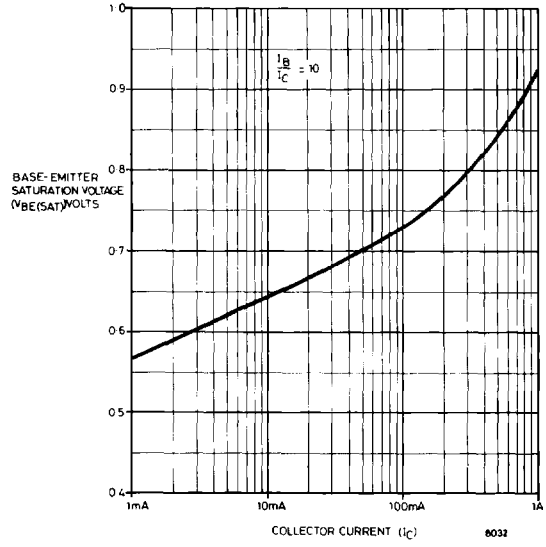
Typical characteristics



Typical static forward current transfer ratio plotted against collector current

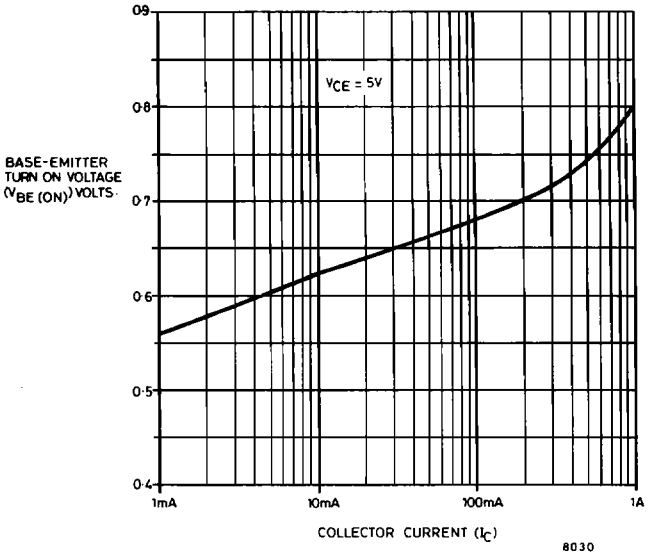


Typical collector-emitter saturation voltages plotted against collector current

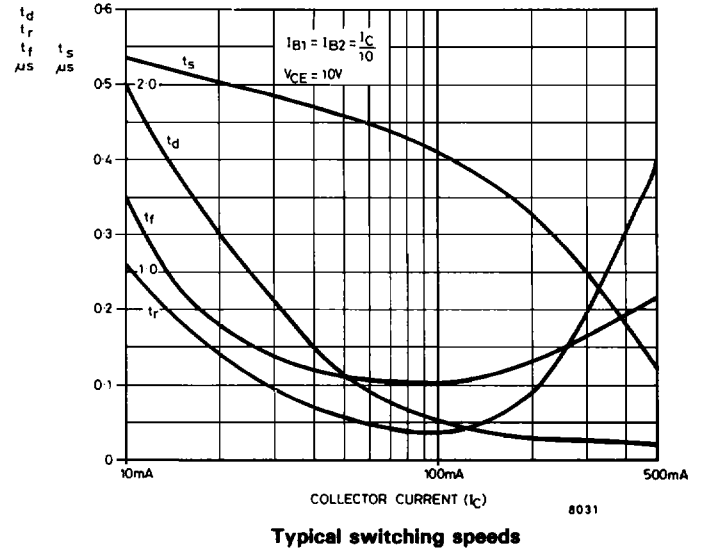


Typical base-emitter saturation voltages plotted against collector current

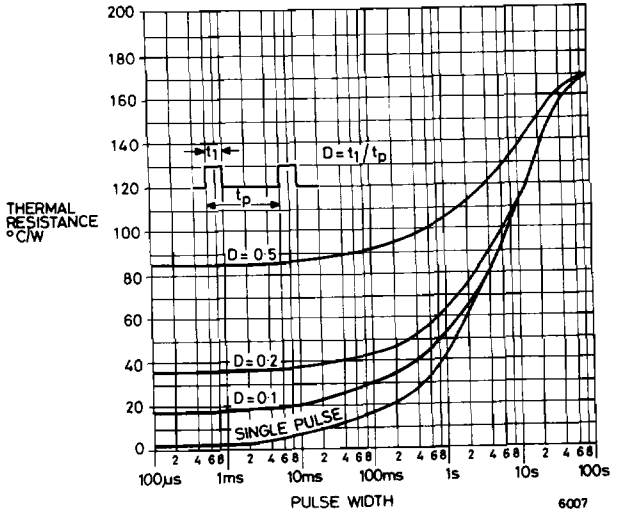
Typical characteristics



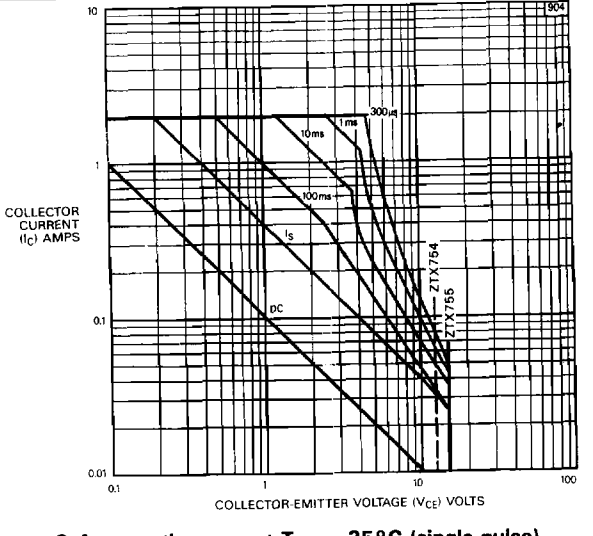
Typical base-emitter turn on voltages plotted against collector current



Typical switching speeds



Maximum transient thermal impedance curves



Safe operating area at T_{amb} = 25°C (single pulse)