

NPN Silicon Planar Medium Power Transistors

ZTX452
ZTX453

FEATURES

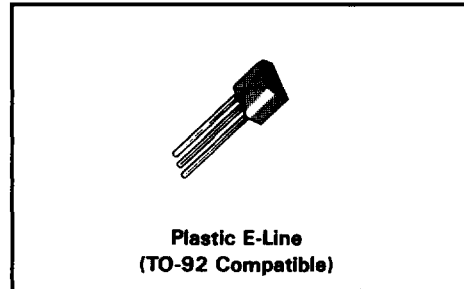
- High power dissipation: 1W at $T_{amb} = 25^{\circ}\text{C}$
- h_{FE} specified up to 1A
- High V_{CEO} up to 100V
- ZTX452 complementary to ZTX552

DESCRIPTION

These are plastic encapsulated, general purpose transistors designed for small and medium signal amplification from d.c. to radio frequencies.

Application areas include: audio frequency amplifiers, drivers and output stages, oscillators and general purpose switching.

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.

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	ZTX452	ZTX453	Unit
Collector-base voltage	V_{CBO}	100	120	V
Collector-emitter voltage	V_{CEO}	80	100	V
Emitter-base voltage	V_{EB}	5		V
Peak pulse current (see note below)	I_{CM}	2		A
Continuous d.c. current	I_C	1		A
Base current	I_B	200		mA
Power dissipation at $T_{amb} = 25^{\circ}\text{C}$ at $T_{case} = 25^{\circ}\text{C}$	P_{tot}	1 2		W W
Operating and storage temperature range		- 55 to + 200		$^{\circ}\text{C}$

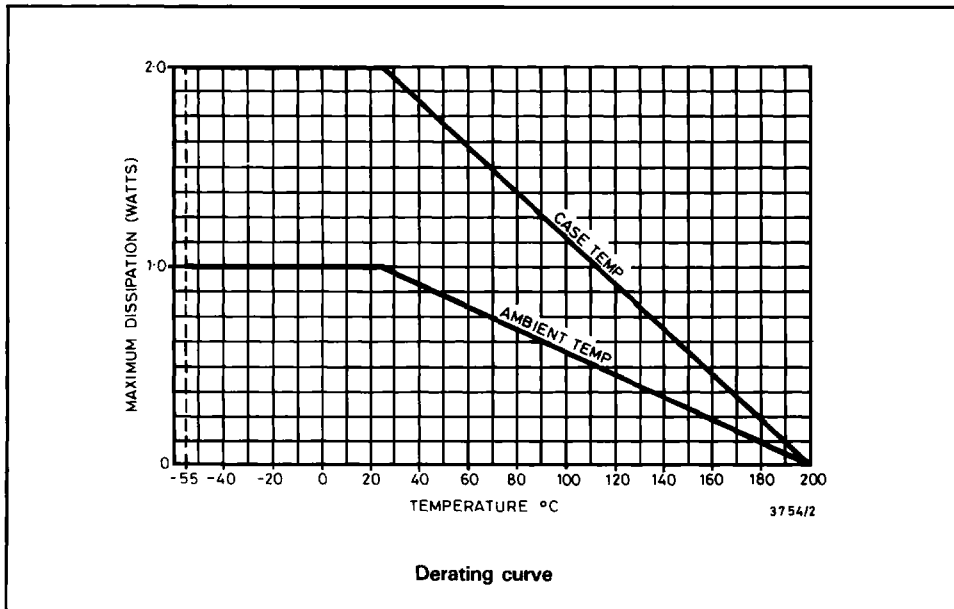
Note: Consult Safe Operating Area graph for conditions.

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

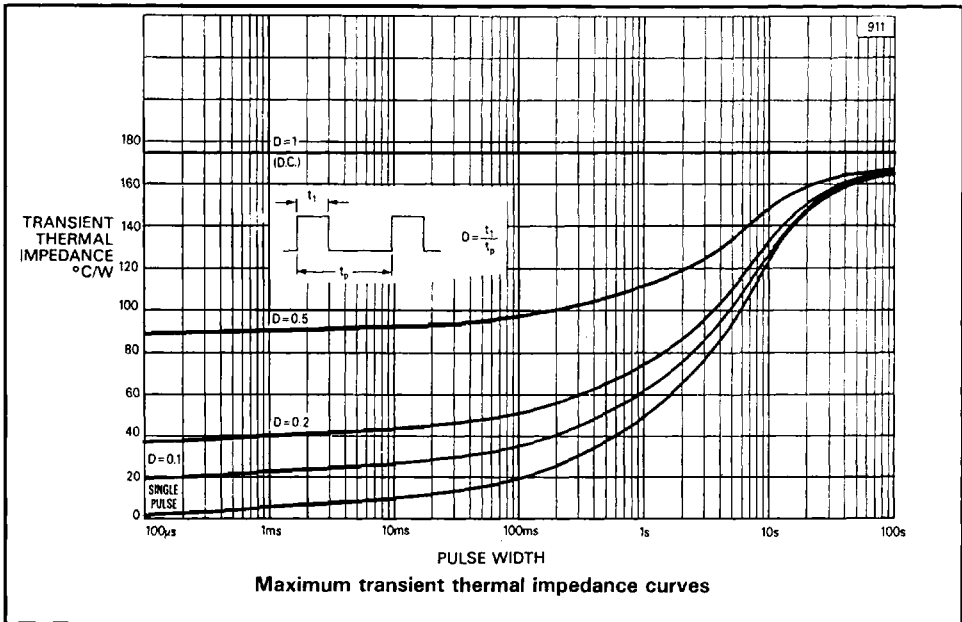
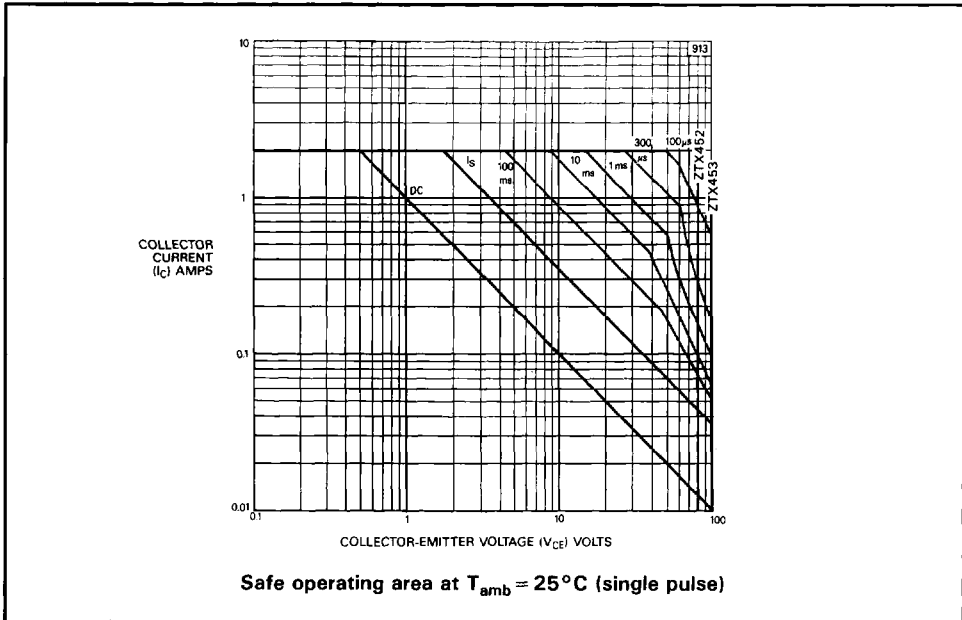
Parameter	Symbol	ZTX452		ZTX453		Unit	Conditions
		Min.	Max.	Min.	Max.		
Collector-base cut-off current	I_{CBO}	-	0.1	-	-	μA	$V_{CB} = 80\text{V}$
		-	-	-	0.1	μA	$V_{CB} = 100\text{V}$
Emitter-base cut-off current	I_{EBO}	-	0.1	-	0.1	μA	$V_{EB} = 4\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	0.7	-	0.7	V	$I_C = 150\text{mA}$, $I_B = 15\text{mA}$
Base-emitter saturation voltage	$V_{BE(sat)}$	-	1.3	-	1.3	V	$I_C = 150\text{mA}$, $I_B = 15\text{mA}$
Collector-emitter sustaining voltage	$V_{CEO(sus)}$	80	-	100	-	V	$I_C = 10\text{mA}$
Static forward current transfer ratio	h_{FE}	40	150	40	200		$I_C = 150\text{mA}$, $V_{CE} = 10\text{V}^*$
		10	-	10	-		$I_C = 1\text{A}$, $V_{CE} = 10\text{V}^*$
Transition frequency	f_T	150	-	150	-	MHz	$I_C = 50\text{mA}$, $V_{CE} = 10\text{V}$ $f = 100\text{MHz}$
Output capacitance	C_{obo}	-	15	-	15	pF	$V_{CB} = 10\text{V}$, $f = 1\text{MHz}$

*Measured under pulsed conditions. Pulse width = $300\mu\text{s}$. Duty cycle $\leq 2\%$.

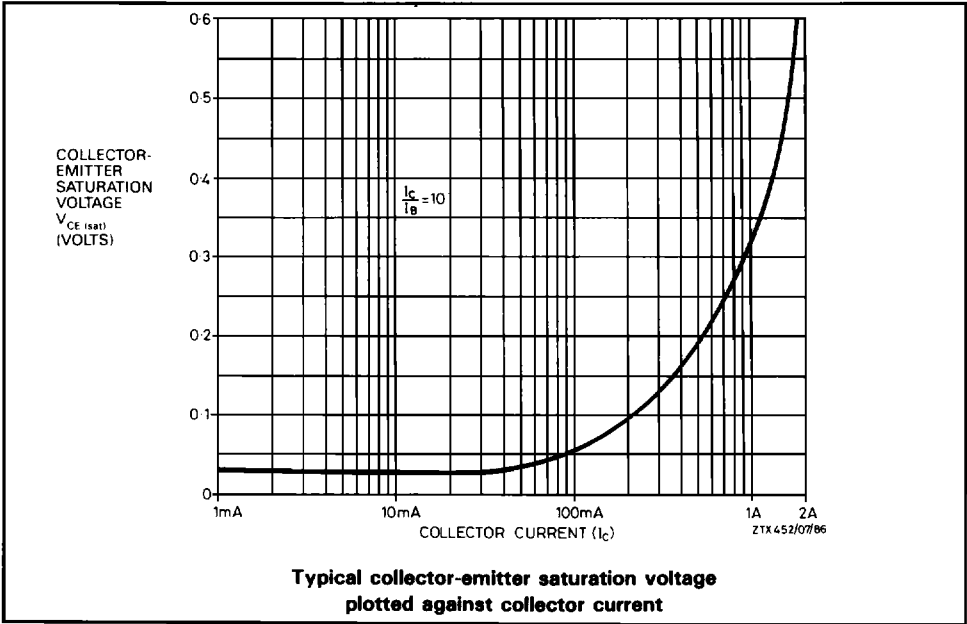
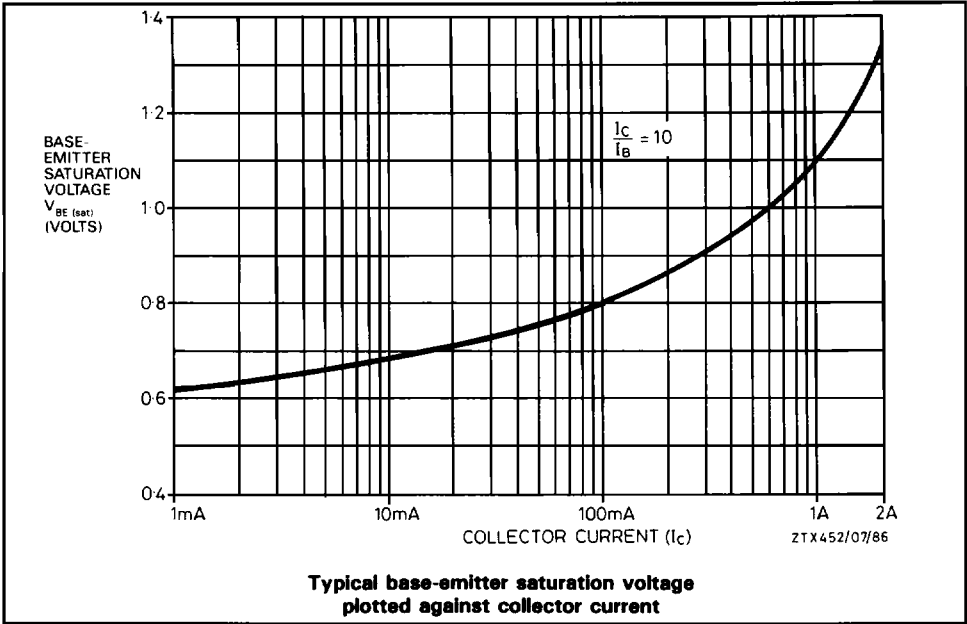


Derating curve

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