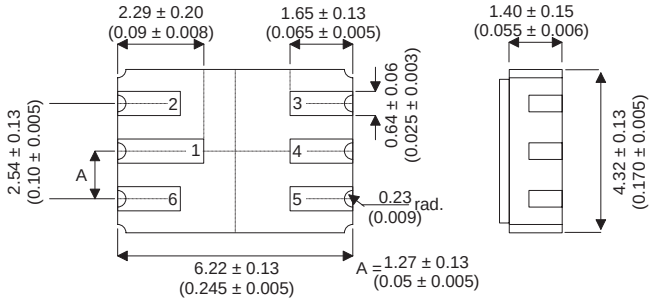
ZTX653DCSM
ZTX753DCSM

NPN/PNP DUAL TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICTIONS

MECHANICAL DATA
Dimensions in mm (inches)



LCC2 PACKAGE
Underside View

ZTX653	ZXT753
PAD 1 – Collector 1	PAD 3 – Base 2
PAD 2 – Base 1	PAD 4 – Collector 2
PAD 6 – Emitter 1	PAD 5 – Emitter 2

FEATURES

- **DUAL SILICON PLANAR NPN/PNP TRANSISTORS**
- **HERMETIC SURFACE MOUNT PACKAGE**
- **CECC SCREENING OPTIONS**
- **SPACE QUALITY LEVEL OPTIONS**

ABSOLUTE MAXIMUM RATINGS PER SIDE (T_C = 25°C unless otherwise stated)

		ZTX653	ZTX753
V_{CBO}	Collector – Base Voltage	120V	-120V
V_{CEO}	Collector – Emitter Voltage	100V	-100V
V_{EBO}	Emitter – Base Voltage	5V	-5V
I_{CM}	Peak Pulse Current * Limited package	2A	-2A
I_C	Continuous Collector Current	2A	-2A
P_{TOT}	Power Dissipation @ T_{amb} = 25°C	1W	
	Derate above 25°C	8mW/°C	
T_jT_{STG}	Operating And Storage Temperature Range	–55 to 150°C	
$R_{\theta J\text{-}A}$	Junction - Ambient Thermal Resistance	125°C/W	

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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ZTX653DCSM
ZTX753DCSM

ZTX653 ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)CBO}$	Collector – Base Breakdown Voltage	I_C = 100µA		120			V
$V_{(BR)CEO}$	Collector – Emitter Breakdown Voltage	I_C = 10mA		100			
$V_{(BR)EBO}$	Emitter – Base Breakdown Voltage	I_E = 100µA		5			
I_{CBO}	Collector – Cut-off Current	V_{CB} = 100V				0.1	µA
			T_C = 100°C			10	
I_{EBO}	Emitter Cut-off Current	V_{EB} = 4V				0.1	
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage	I_C = 500mA	I_B = 50mA*		0.2	0.3	V
		I_C = 1A	I_B = 100mA*		0.35	0.5	
		I_C = 2A	I_B = 200mA*		0.8	1.0	
$V_{BE(sat)}$	Base – Emitter Saturation Voltage	I_C = 1A	I_B = 100mA*		1.0	1.3	
$V_{BE(on)}$	Base – Emitter Turn-On Voltage	I_C = 1A	V_{CE} = 2V*		0.95	1.2	
H_{FE}	DC Current Gain	I_C = 50mA	V_{CE} = 2V*	70	200		—
		I_C = 500mA	V_{CE} = 2V*	100	200	300	
		I_C = 1A	V_{CE} = 2V*	55	110		
		I_C = 2A	V_{CE} = 2V*	25	55		

* Pulse test t_p = 300ms , $\delta \leq 2\%$

DYNAMIC CHARACTERISTICS (T_A = 25°C unless otherwise stated)

Parameter		Test Conditions	Min.	Typ.	Max.	Unit
f_T	Transition Frequency	I_C = 100mA V_{CE} = 5V f = 100MHz	140	175		MHz
C_{obo}	Output Capacitance	V_{CB} = 10V f = 1.0MHz			30	pF
T_{on}	Switching Times	I_C = 500mA V_{CC} = 10V		80		ns
T_{off}	Switching Times	I_{B1}=I_{B2}=50mA		1200		

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ZTX753 ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise stated)

	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)CBO}$	Collector – Base Breakdown Voltage	I_C = -100µA		-120			V
$V_{(BR)CEO}$	Collector – Emitter Breakdown Voltage	I_C = -10mA		-100			
$V_{(BR)EBO}$	Emitter – Base Breakdown Voltage	I_E = -100µA		-5			
I_{CBO}	Collector – Cut-off Current	V_{CB} = -100V				-0.1	µA
			T_C = 100°C			-10	
I_{EBO}	Emitter Cut-off Current	V_{EB} = -4V				-0.1	
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage	I_C = -500mA	I_B = -50mA*		-0.2	-0.3	V
		I_C = -1A	I_B = -100mA*		-0.35	-0.5	
		I_C = -2A	I_B = -200mA*		-0.8	-1.0	
$V_{BE(sat)}$	Base – Emitter Saturation Voltage	I_C = -1A	I_B = -100mA*		-1.0	-1.3	
$V_{BE(on)}$	Base – Emitter Turn-On Voltage	I_C = -1A	V_{CE} = -2V*		-0.95	-1.2	
H_{FE}	DC Current Gain	I_C = -50mA	V_{CE} = -2V*	70	200		—
		I_C = -500mA	V_{CE} = -2V*	100	200	300	
		I_C = -1A	V_{CE} = -2V*	55	110		
		I_C = -2A	V_{CE} = -2V*	25	55		

* Pulse test t_p = 300ms , $\delta \leq 2\%$

DYNAMIC CHARACTERISTICS (T_A = 25°C unless otherwise stated)

	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
f_T	Transition Frequency	I_C = -100mA V_{CE} = -5V f = 100MHz	100	140		MHz
C_{obo}	Output Capacitance	V_{CB} = -10V f = 1.0MHz			30	pF
T_{on}	Switching Times	I_C = -500mA V_{CC} = -10V		40		ns
T_{off}	Switching Times	I_{B1}=I_{B2}=-50mA		600		

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