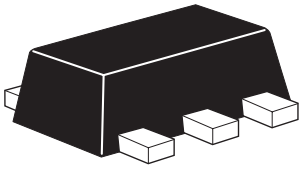
FCX555
180V High voltage PNP switching transistor in SOT89

Summary

BV_{CEV} > -180V



Description

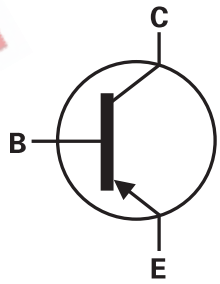
Packaged in the SOT89 outline this new high gain medium power PNP transistor offers 180V forward blocking capability making it ideal for use in VOIC and various driving and power management functions.

Features

- 180 volts forward blocking

Applications

- Voice over internet protocol (VOIC)
- MOSFET gate drivers
- Power switches
- Motor control



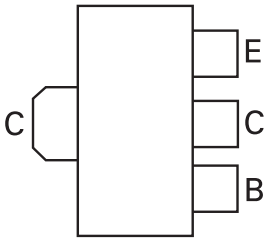
Ordering information

Device	Reel size	Tape width	Quantity per reel
FCX555TA	7"	12mm embossed	1,000

Device marking

555

Pin out - top view



Absolute maximum ratings

Parameter	Symbol	Limit	Unit
Collector-base voltage	V_{CBO}	-180	V
Collector-emitter voltage	V_{CEV}	-180	V
Emitter-base voltage	V_{EBO}	-7	V
Continuous collector current[a]	I_C	-0.7	A
Peak pulse current	I_{CM}	-2	A
Power dissipation at T_A =25°C[a] Linear derating factor	P_D	1.5 12	W mW/°C
Power dissipation at T_A =25°C[b] Linear derating factor	P_D	2.1 16.8	W mW/°C
Operating and storage temperature range	T_j:T_{stg}	-55 to +150	°C

Thermal resistance

Parameter	Symbol	Value	Unit
Junction to ambient[a]	$R\theta_{JA}$	83	°C/W

NOTES:

(a) For a device surface mounted on 25mm x 25mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.

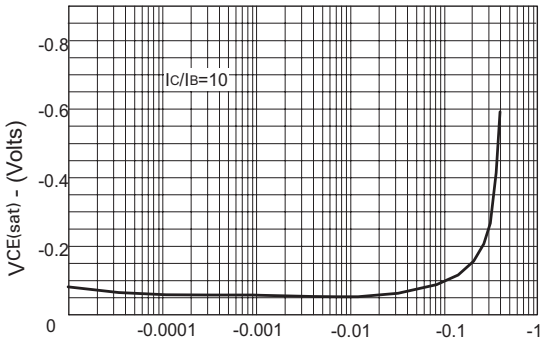
(b) For a device surface mounted on 50mm x 50mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.

Electrical characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	-180			V	I_C = -100µA
Collector-emitter breakdown voltage	BV_{CEV}	-180			V	I_C = -1µA, -0.3V < V_{BE} < 1V
Collector-emitter breakdown voltage	BV_{CER}	-180			V	I_C = -1µA, RB≤1kΩ
Emitter-base breakdown voltage	BV_{EBO}	-7	-8.1		V	I_E= -100µA
Collector-emitter breakdown voltage	BV_{CEO}	-150			V	I_C =-10mA(*)
Collector cut-off current	I_{CBO}		<1	-20 -10	nA µA	V_{CB} = -144V V_{CB} = -144V, T_{AMB} = 100°C
Emitter cut-off current	I_{EBO}		<1	-20	nA	V_{EB} = -6V
Collector emitter saturation voltage	$V_{CE(SAT)}$			-300 -400	mV mV	I_C = -0.1A, I_B = -10mA(*) I_C = -0.25A, I_B = -25mA(*)
Base-emitter saturation voltage	$V_{BE(SAT)}$			-1000	mV	I_C =-250mA, I_B =-25mA(*)
Base-emitter turn-on voltage	$V_{BE(ON)}$			-950	mV	I_C =-250mA, V_{CE} =-5V(*)
Static forward current transfer ratio	h_{FE}	100 100		 300		I_C = -10mA, V_{CE} = -5V(*) I_C = -100mA, V_{CE} = -5V(*)
Transition frequency	f_T		100		MHz	I_c = -50mA, V_{CE} = -10V, f = 100MH$_Z$
Output capacitance	C_{OBO}			10	pF	V_{CB} 1= -10V, f = 1MH$_Z$(*)

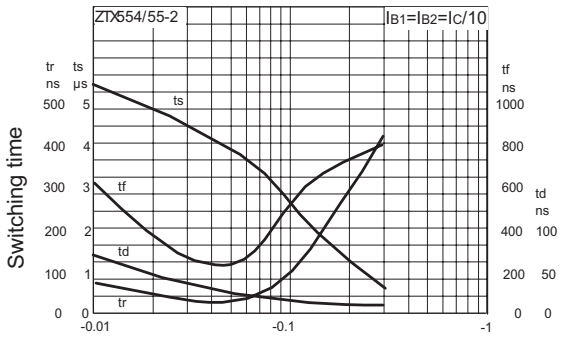
NOTES:
(*) Measured under pulsed conditions. Pulse width ≤300µs; duty cycle ≤2%.

Typical characteristics



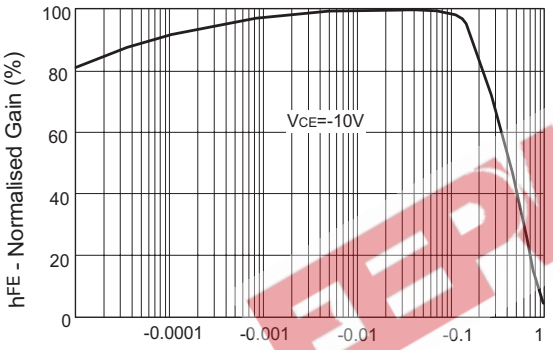
IC - Collector Current (Amps)

VCE(sat) v IC



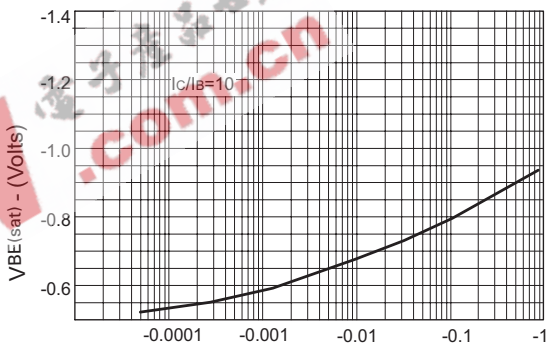
IC - Collector Current (Amps)

Switching Speeds



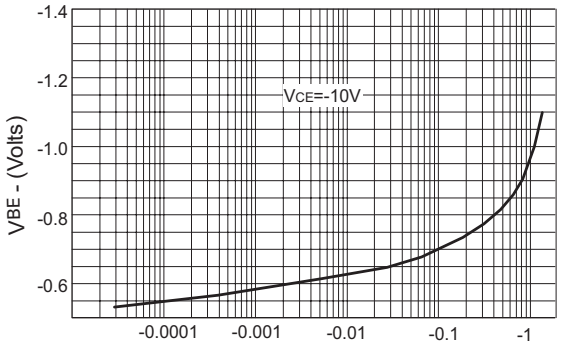
IC - Collector Current (Amps)

hFE v IC



IC - Collector Current (Amps)

VBE(sat) v IC



IC - Collector Current (Amps)

VBE(on) v IC

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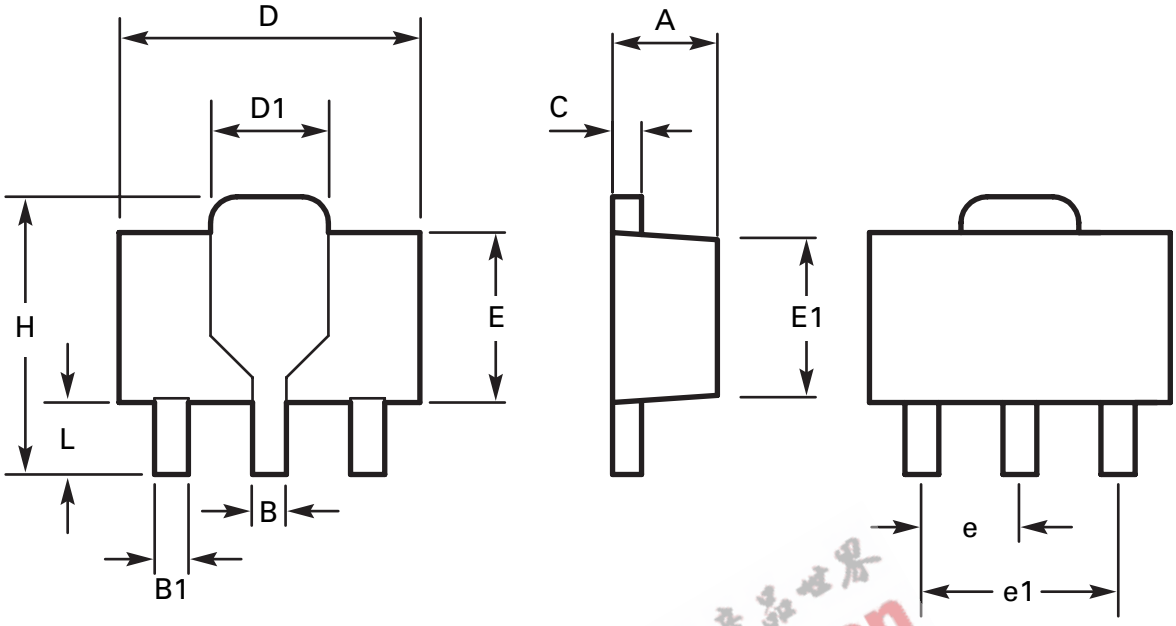
SOT89 Packaging details



DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Min	Max
A	1.40	1.60	0.550	0.630	E1	2.13	2.29	0.084	0.090
B	0.44	0.56	0.017	0.022	e	1.50 BSC		0.059 BSC	
B1	0.36	0.48	0.014	0.019	e1	3.00 BSC		0.118 BSC	
C	0.35	0.44	0.014	0.019	H	3.94	4.25	0.155	0.167
D	4.40	4.60	0.173	0.181	L	0.89	1.20	0.155	0.167
E	2.29	2.60	0.090	0.102		-	-	-	-

Note: Controlling dimensions are in millimeters. Approximate dimensions are provided in inches

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