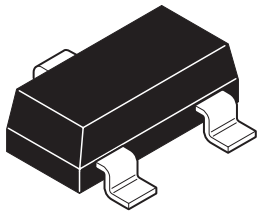
ZXTN2040F
SOT23 40 volt NPN silicon planar medium power transistor

Summary

$V_{(BR)CEO}$ > 40V
$I_{c(cont)}$ = 1A
$V_{ce(sat)}$ < 500mV @ 1A



Complementary type

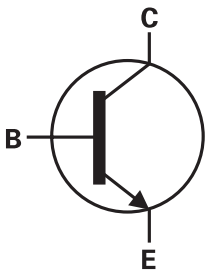
ZXTP2041F

Description

This transistor combines high gain, high current operation and low saturation voltage making it ideal for power MOSFET gate driving and low loss power switching.

Features

- Low saturation voltage for reduced power dissipation
- 1 to 2 amp high current capability
- Pb-free
- SOT23 package



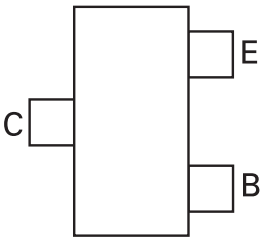
Applications

- Power MOSFET gate driving
- Low loss power switching

Ordering information

Device	Reel size	Tape width	Quantity per reel
ZXTN2040FTA	7″	8mm	3,000
ZXTN2040FTC	13″	8mm	10,000

Pin out - top view



Device marking

N40

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Absolute maximum ratings

Parameter	Symbol	Limit	Unit
Collector-base voltage	V_{CBO}	40	V
Collector-emitter voltage	V_{CEO}	40	V
Emitter-base voltage	V_{EBO}	5.0	V
Peak pulse current	I_{CM}	2	A
Continuous collector current *	I_C	1	A
Peak base current	I_{BM}	1	A
Power dissipation @ T_A=25°C*	P_D	350	mW
Operating and storage temperature	T_j:T_{stg}	-55 to +150	°C

NOTES:

* For a device surface mounted on a 15mm x 15mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.

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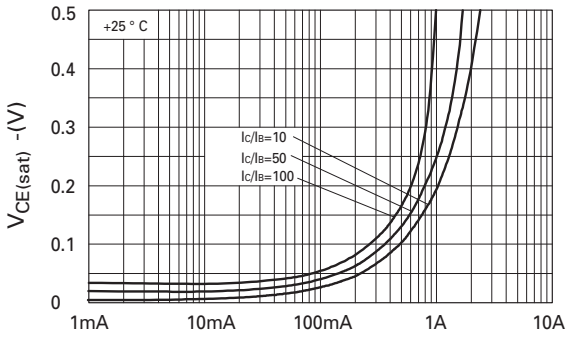
Electrical characteristics (@T_{AMB} = 25°C)

Parameter	Symbol	Min.	Max.	Unit	Conditions
Collector-base breakdown voltage	$V_{(BR)CBO}$	40		V	I_C=100μA
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	40		V	I_C=10mA*
Emitter-base breakdown voltage	$V_{(BR)EBO}$	5		V	I_E=100μA
Collector-emitter cut-off current	I_{CES}		100	nA	V_{CE}=30V
Collector-base cut-off current	I_{CBO}		100	nA	V_{CB}=30V
Emitter-base cut-off current	I_{EBO}		100	nA	V_{EB}=4V
Static forward current transfer ratio	h_{FE}	300 300 200 35	900		I_C=1mA, V_{CE}=5V* I_C=500mA, V_{CE}=5V* I_C=1A, V_{CE}=5V* I_C=2A, V_{CE}=5V*
Collector-emitter saturation voltage	$V_{CE(sat)}$		0.2 0.3 0.5	V V V	I_C=100mA, I_B=1mA* I_C=500mA, I_B=50mA* I_C=1A, I_B=100mA*
Base-emitter saturation voltage	$V_{BE(sat)}$		1.1	V	I_C=1A, I_B=100mA*
Base-emitter turn-on voltage	$V_{BE(on)}$		1.0	V	I_C=1A, V_{CE}=5V*
Transition frequency	f_T	150			I_C=50mA, V_{CE}=10V f=100MHz
Output capacitance	C_{obo}		10	pF	V_{CB}=10V, f=1MHz

NOTES:
* Measured under pulsed conditions. Pulse width=300μS. Duty cycle ≤2%
Spice parameter data is available upon request for this device

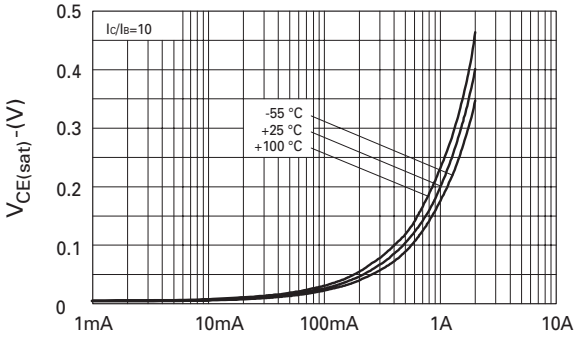
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Typical characteristics



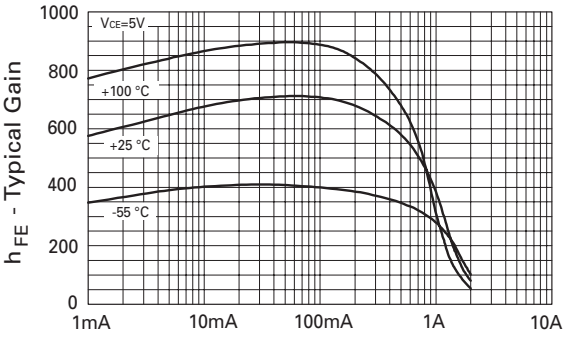
IC-Collector Current

VCE(sat) v IC



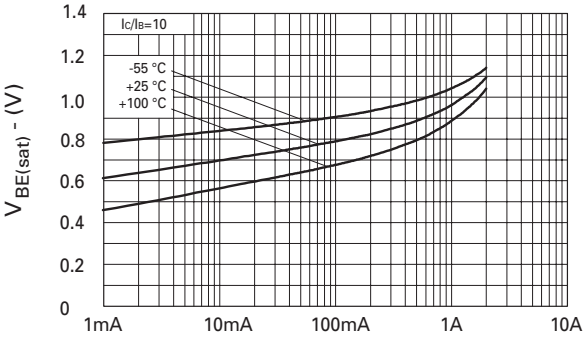
IC-Collector Current

VCE(sat) v IC



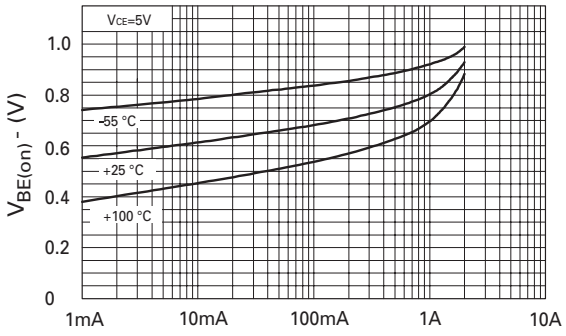
IC-Collector Current

hFE V IC



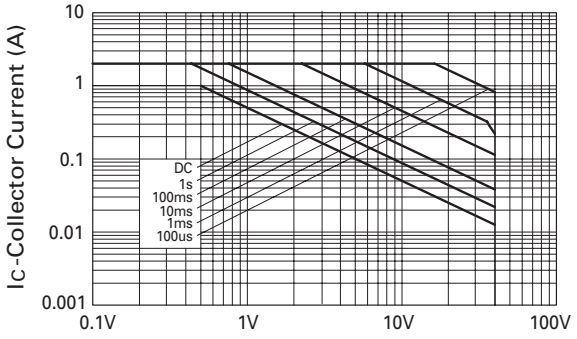
IC-Collector Current

VBE(sat) v IC



IC-Collector Current

VBE(on) v IC

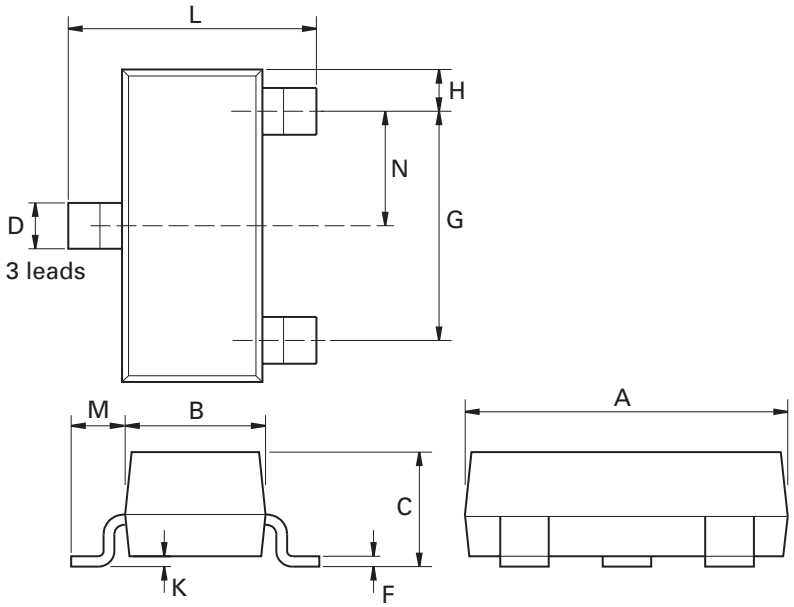


VCE - Collector Emitter Voltage (V)

Safe Operating Area

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Packaging details - SOT23



Package dimensions

Dimensions in inches are control dimensions, dimensions in millimeters are approximate.

Dim.	Millimeters		Inches		Dim.	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Max.	Max.
A	2.67	3.05	0.105	0.120	H	0.33	0.51	0.013	0.020
B	1.20	1.40	0.047	0.055	K	0.01	0.10	0.0004	0.004
C	-	1.10	-	0.043	L	2.10	2.50	0.083	0.0985
D	0.37	0.53	0.015	0.021	M	0.45	0.64	0.018	0.025
F	0.085	0.15	0.0034	0.0059	N	0.95 Nom.		0.0375 Nom.	
G	1.90 Nom.		0.075 Nom.		-	-	-	-	-

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