优尚

YOUSHANG SEMICONDUCTOR

设计研发新型功率器件

各类小信号开关

中低压及高压大电流等场效应管

0755-83047638
ysbdt@szyoushang.cn
www.szyoushang.cn

企业微信二维码

企业QQ二维码

Summary

$V_{(BR)CEV}$ > 80V
$V_{(BR)CEO}$ > 60V
$I_{c(cont)}$ = 1A
$V_{ce(sat)}$ < 500mV @ 1A

Complementary type

NK-ZXTP2039F

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
NK-ZXTN2038FTA	7″	8mm	3,000
NK-ZXTN2038FTC	13″	8mm	10,000

Device marking

N38

Absolute maximum ratings

Parameter	Symbol	Limit	Unit
Collector-base voltage	V_{CBO}	80	V
Collector-emitter voltage	V_{CEV}	80	V
Collector-emitter voltage	V_{CEO}	60	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

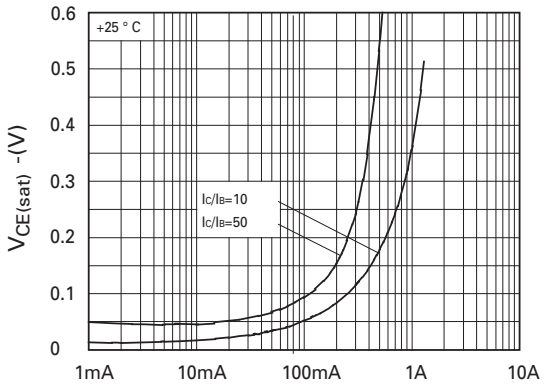
NOTES:
(*) For a device surface mounted on a 15mm x 15mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.

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

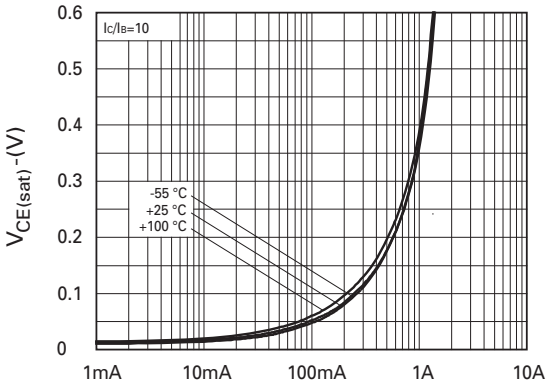
Parameter	Symbol	Min	Max	Unit	Conditions
Collector-base breakdown voltage	$V_{(BR)CBO}$	80		V	I_C=100μA
Collector-emitter breakdown voltage	$V_{(BR)CEV}$	80		V	I_C=100μA, 0.3V > V_{BE} > -1V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	60		V	I_C=10mA (*)
Emitter-base breakdown voltage	$V_{(BR)EBO}$	5		V	I_E=100μA
Collector-emitter cut-off current	I_{CES}		100	nA	V_{CE}=60V
Collector-base cut-off current	I_{CBO}		100	nA	V_{CB}=60V
Emitter-base cut-off current	I_{EBO}		100	nA	V_{EB}=4V
Static forward current transfer ratio	h_{FE}	100 100 80 30	300		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 0.25 0.5	V V V	I_C=100mA, I_B=2mA(*) 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

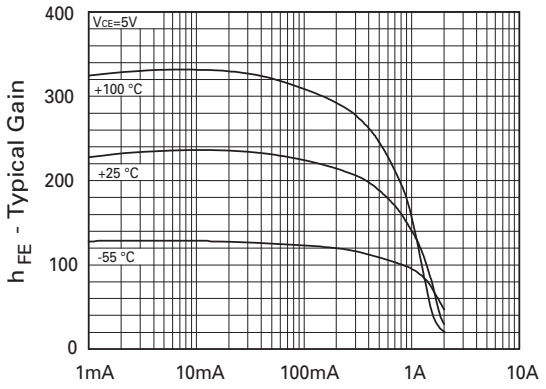
Typical characteristics



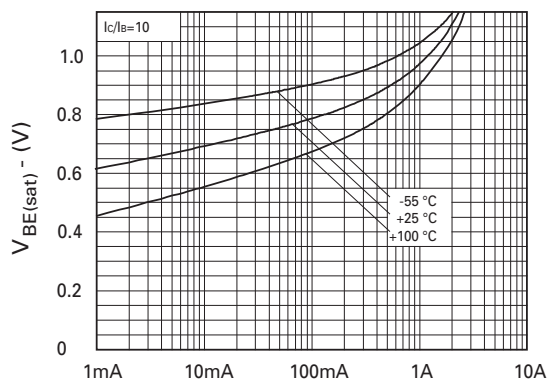
VCE(sat) v IC



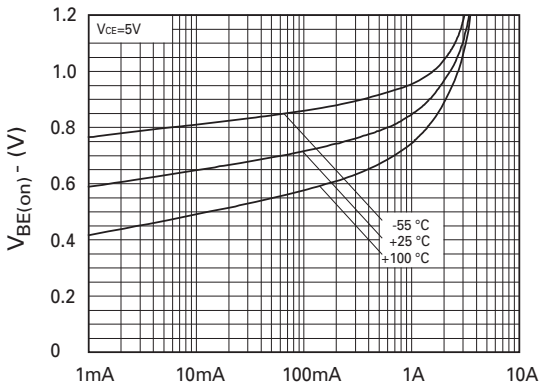
VCE(sat) v Ic



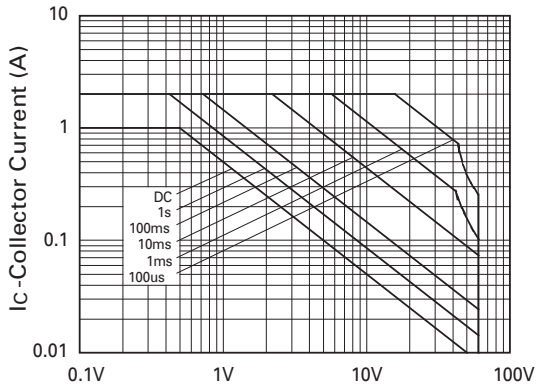
hFE V IC



VBE(sat) v Ic

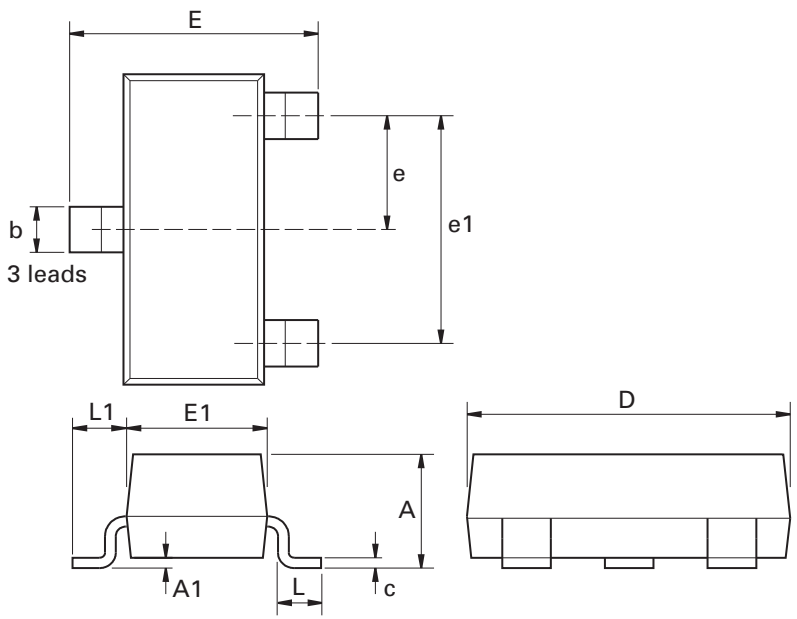


VBE(on) v IC



Safe Operating Area

Packaging details - SOT23



Package dimensions

Dim	Millimeters		Inches		Dim	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Min	Max
A	-	1.12	-	0.044	e1	1.90 NOM		0.075 NOM	
A1	0.01	0.10	0.0004	0.004	E	2.10	2.64	0.083	0.104
b	0.30	0.50	0.012	0.020	E1	1.20	1.40	0.047	0.055
c	0.085	0.20	0.003	0.008	L	0.25	0.60	0.0098	0.0236
D	2.80	3.04	0.110	0.120	L1	0.45	0.62	0.018	0.024
e	0.95 NOM		0.037 NOM		-	-	-	-	-

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