

ZXTP2041F

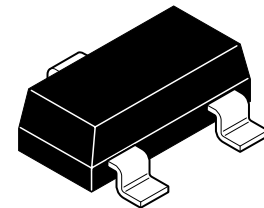
SOT23 40 volt PNP silicon planar medium power transistor

Summary

$V_{(BR)CEO} > -40V$

$I_{c(cont)} = -1A$

$V_{ce(sat)} < -500mV @ -1A$



Complementary type

ZXTP2041F

Description

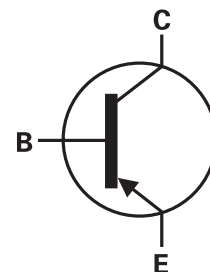
This transistor combines high gain, high current operation and low saturation voltage making it ideal for power MOSFET gate driving and low loss power switching.

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



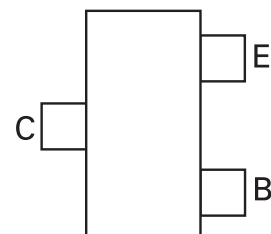
Ordering information

| Device | Reel size | Tape width | Quantity per reel |
|-------------|-----------|------------|-------------------|
| ZXTP2041FTA | 7" | 8mm | 3,000 |
| ZXTP2041FTC | 13" | 8mm | 10,000 |

Device marking

P41

Pin out - top view



ZXTP2041F

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 @ $T_A=25^{\circ}C$ * | P_D | 350 | mW |
| Operating and storage temperature | $T_j; T_{stg}$ | -55 to +150 | $^{\circ}C$ |

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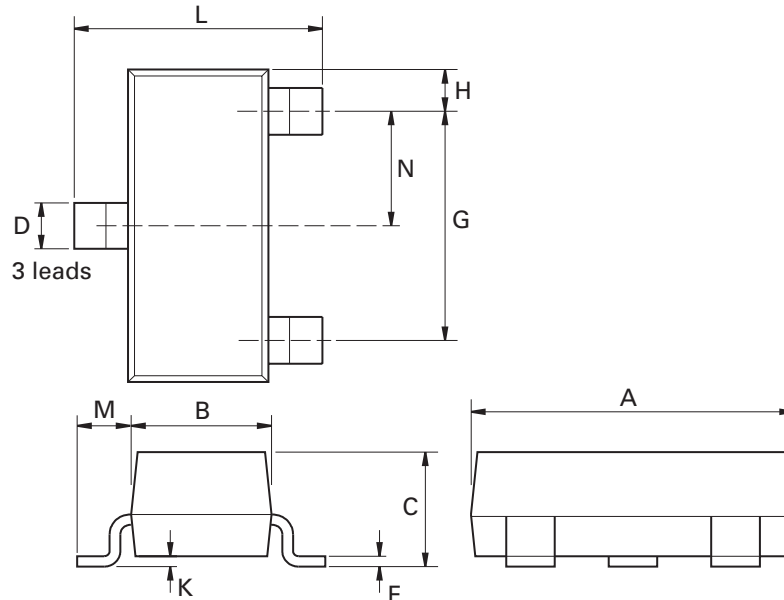
Electrical characteristics (@T_{AMB} = 25°C)

| 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} | 300 300 250 160 30 | 800 | | I _C = -1mA, V _{CE} = -5V I _C = -100mA, 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 = -20mA* I _C = -1A, I _B = -100mA* |
| Base-emitter saturation voltage | V _{BE(sat)} | | -1.1 | V | I _C = -1A, I _B = -50mA* |
| 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 = 300 μs. Duty cycle ≤ 2%
Spice parameter data is available upon request for this device

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. | | - | - | - | - | - |

Europe

Zetex GmbH
Streitfeldstraße 19
D-81673 München
Germany

Telefon: (49) 89 45 49 49 0
Fax: (49) 89 45 49 49 49
europe.sales@zetex.com

Americas

Zetex Inc
700 Veterans Memorial Highway
Hauppauge, NY 11788
USA

Telephone: (1) 631 360 2222
Fax: (1) 631 360 8222
usa.sales@zetex.com

Asia Pacific

Zetex (Asia Ltd)
3701-04 Metroplaza Tower 1
Hing Fong Road, Kwai Fong
Hong Kong

Telephone: (852) 26100 611
Fax: (852) 24250 494
asia.sales@zetex.com

Corporate Headquarters

Zetex Semiconductors plc
Zetex Technology Park, Chadderton
Oldham, OL9 9LL
United Kingdom

Telephone (44) 161 622 4444
Fax: (44) 161 622 4446
hq@zetex.com

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