



SOLID STATE DEVICES, INC.

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DESIGNER'S DATA SHEET

Part Number /Ordering Information ^{1/}

SFT6338 M TX
 SFT6339 M TX
 SFT6340 M TX
 SFT6341 M TX

Screening ^{2/}: _ = Not Screened

TX = TX Level

TXV = TXV Level

S = Space Level

Lead Bend ^{3/4/} _ = Straight

UB = Up Bend

DB = Down Bend

Package: ^{3/} M = TO-254

Z = TO-254Z

/3 = TO-3

SFT6338 - SFT6341 SERIES

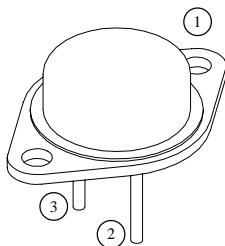
25 AMP 100 - 150 VOLTS NPN HIGH SPEED POWER TRANSISTOR

APPLICATION NOTES:

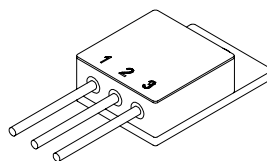
- Replaces Industry Standard 2N6338 thru 2N6341
- Designed for High Voltage, High Speed, Power Switching Applications Such as:
 - Off-Line Supplies
 - Converter Circuits
 - Pulse Width Modulated Regulators
 - Motor Controls
 - Deflection Circuits
- Designed for Complimentary Use with SFT6436 thru SFT6438

| MAXIMUM RATINGS | | SYMBOL | VALUE | UNITS |
|---|---------|-----------------------------------|-------------|-------|
| Collector-Emitter Voltage | SFT6338 | V _{CEO} | 100 | Volts |
| | SFT6339 | | 120 | |
| | SFT6340 | | 140 | |
| | SFT6341 | | 150 | |
| Collector-Base Voltage | SFT6338 | V _{CB0} | 120 | Volts |
| | SFT6339 | | 140 | |
| | SFT6340 | | 160 | |
| | SFT6341 | | 180 | |
| Continuous Collector Current | | I _C | 25 | Amps |
| Peak Collector Current | | I _{C(pk)} | 50 | Amps |
| Continious Base Current | | I _B | 10 | Amps |
| Operating and Storage Temperature | | T _J , T _{STG} | -65 to +200 | °C |
| Total Device Dissipation @ T _C = 25°C Derate above 25°C | | P _D | 200 | W |
| | | | 1.14 | W/°C |
| Thermal Resistance, Junction to Case | | R _{θJC} | 1.0 | °C/W |

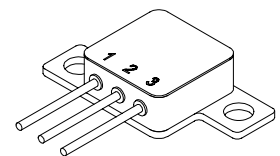
TO-3



TO-254



TO-254Z



NOTE: All specifications are subject to change without notification.
 SCD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: TR0025A

SFT6338 - SFT6341 SERIES



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| ELECTRICAL CHARACTERISTICS ^{5/} | | SYMBOL | MIN | MAX | UNITS |
|---|---|-----------------------------|------------|-------------|-----------------------|
| Collector Cutoff Current (V _{CE} Rated V _{CEO} , V _{BE} = 1.5V _{DC}) | (T _C = 25°C) | I_{CEX} | - | 10 | mA |
| | (T _C = 150°C) | | - | 1.0 | mA |
| Collector Cutoff Current (V _{CB} Rated V _{CBO} , I _E = 0) | | I_{CBO} | - | 10 | mA |
| Emitter Cutoff Current (V _{EB} = 6V _{DC} , I _C = 0) | | I_{EBO} | - | 100 | mA |
| Collector-Emmitter Sustaining Voltage * (I _C = 50mA, I _B = 0) | SFT6338 SFT6339 SFT6340 SFT6341 | V_{CEO(sus)} | 100 | - | V_{DC} |
| | | | 120 | | |
| | | | 140 | | |
| | | | 150 | | |
| DC Current Gain * (V _{CE} = 2.0V _{DC}) | (I _C = 0.5A _{DC}) (I _C = 10A _{DC}) (I _C = 25A _{DC}) | h_{FE} | 50 | - | |
| | | | 30 | 120 | |
| | | | 12 | - | |
| Base-Emmitter Saturation Voltage* | (I _C = 10A _{DC} , I _B = 1A _{DC}) (I _C = 25A _{DC} , I _B = 2.5A _{DC}) | V_{BE (SAT)} | - | 1.8 | V_{DC} |
| | | | - | 2.5 | |
| Collector-Emmitter Saturation Voltage* | (I _C = 10A _{DC} , I _B = 1A _{DC}) (I _C = 25A _{DC} , I _B = 2.5A _{DC}) | V_{CE (SAT)} | - | 1.0 | V_{DC} |
| | | | - | 1.8 | |
| Current Gain (I _C = 1A, V _{CE} = 10V _{DC} , f = 10MHz) | | h_{fe} | 4 | - | |
| Output Capacitance (I _E = 0, V _{CB} = 10V _{DC} , f = 0.1MHz) | | C_{ob} | - | 300 | pf |
| Rise Time | (V _{CC} = 80V _{DC} , I _C = 10A _{DC} , V _B = 6V _{DC} I _{B1} = I _{B2} = 1A _{DC} , R _L = 8W, t _p = 10msec, Duty Cycle ≤ 1%) | t_r | - | 0.3 | msec |
| Storage Time | | t_s | - | 1.0 | msec |
| Fall Time | | t_f | - | 0.25 | msec |

NOTES:

- * Pulse Test: Pulse Width = 300us, Duty Cycle = 2%
- 1/ For Ordering Information, Price, and Availability Contact Factory.
- 2/ Screening per MIL-PRF-19500.
- 3/ For Package Outlines Contact Factory.
- 4/ Up and Down Bend Configurations Available for M and Z (TO-254 and TO-254Z) Packages Only.
- 5/ All Electrical Characteristics @25°C, Unless Otherwise Specified.

Available Part Numbers:

| | | |
|------------------|-----------------|-----------------|
| SFT6338/3 | SFT6338M | SFT6338Z |
| SFT6339/3 | SFT6339M | SFT6339Z |
| SFT6340/3 | SFT6340M | SFT6340Z |
| SFT6341/3 | SFT6341M | SFT6341Z |

PIN ASSIGNMENT

| PACKAGE | Collector | Emmitter | Base |
|---------|-----------|----------|-------|
| TO-3 | Case (1) | Pin 2 | Pin 3 |
| TO-254 | Pin 1 | Pin 2 | Pin 3 |
| TO-254Z | Pin 1 | Pin 2 | Pin 3 |