





350V PNP SILICON PLANAR HIGH VOLTAGE TRANSISTOR IN SOT23

Features and Benefits

- BV_{CEO} > -350V
- Maximum Continuous Collector Current I_C = -500mA
- 330mW power dissipation
- Complementary part number FMMT6517
- Lead Free, RoHS Compliant (Note 1)
- Halogen and Antimony Free "Green" Device (Note 2)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

- Case: SOT-23
- UL Flammability Rating 94V-0
- Case material: molded Plastic.
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish; Solderable per MIL-STD-202, Method 208
- Weight: 0.008 grams (Approximate)

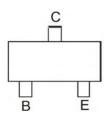
Applications

Power switches





Device Symbol



Top View Pin-Out

Top View

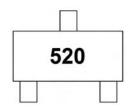
Ordering Information (Note 3)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
FMMT6520TA	520	7	8	3,000

Notes:

- 1. No purposefully added lead.
- 2. Diodes Inc.'s "Green" Policy can be found on our website at http://www.diodes.com
- 3. For Packaging Details, go to our website at http://www.diodes.com.

Marking Information



520 = Product Type Marking Code

FMMT6520 Document Number: DS33123 Rev. 3 - 2



Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-350	V
Collector-Emitter Voltage	V _{CEO}	-350	V
Emitter-Base Voltage	V _{EBO}	-5	V
Continuous Collector Current	Ic	-500	mA

Thermal Characteristics @TA = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 4)	P _D	330	mW
Thermal Resistance, Junction to Ambient	(Note 4)	$R_{\theta JA}$	379	°C/W
Thermal Resistance, Junction to Lead	(Note 5)	R _{0JL}	350	°C/W
Operating and Storage Temperature Range	$T_{J_i}T_{STG}$	-55 to +150	°C	

Notes:

- 4. For a device surface mounted FR4 PCB with minimum recommended pad layout; high coverage of single sided 1 oz copper, in still air conditions; the device is measured when operating in a steady-state condition.

 5. Thermal resistance from junction to solder-point (at the end of the collector lead).

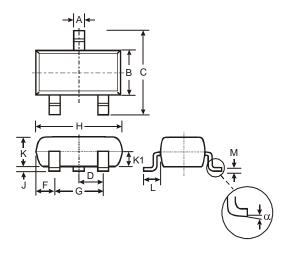
Electrical Characteristics @TA = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_CBO	-350			V	$I_C = -100 \mu A$
Collector-Emitter Breakdown Voltage (Note 6)	BV _{CEO}	-350			V	$I_C = -1mA$
Emitter-Base Breakdown Voltage	BV _{EBO}	-5			V	$I_E = -10\mu A$
Collector Cutoff Current	I _{CBO}			-50	nA	V _{CB} = -250V
Emitter Cutoff Current	I _{EBO}			-50	nA	V _{EB} = -3V
Static Forward Current Transfer Ratio (Note 6)	h _{FE}	20 30 30 20 15		200 200		$\begin{split} I_{C} &= -1 \text{mA}, \ V_{CE} = -10 \text{V} \\ I_{C} &= -10 \text{mA}, \ V_{CE} = -10 \text{V} \\ I_{C} &= -30 \text{mA}, \ V_{CE} = -10 \text{V} \\ I_{C} &= -50 \text{mA}, \ V_{CE} = -10 \text{V} \\ I_{C} &= -100 \text{mA}, \ V_{CE} = -10 \text{V} \end{split}$
Collector-Emitter Saturation Voltage (Note 6)	V _{CE(sat)}			-300 -350 -500 -1000	mV mV mV	$I_C = -10mA$, $I_B = -1mA$ $I_C = -20mA$, $I_B = -2mA$ $I_C = -30mA$, $I_B = -3mA$ $I_C = -50mA$, $I_B = -5mA$
Base-Emitter Saturation Voltage(Note 6)	V _{BE(sat)}			-750 -850 -900	mV	$I_C = -10$ mA, $I_B = -1$ mA $I_C = -20$ mA, $I_B = -2$ mA $I_C = -30$ mA, $I_B = -3$ mA
Base-Emitter Turn-On Voltage(Note 6)	$V_{BE(on)}$			-2.0	V	$I_C = -100 \text{mA}, V_{CE} = -10 \text{V}$
Output Capacitance	C _{obo}			6	pF	V _{CB} = -20V, f = 1MHz
Transition Frequency	f⊤	50			MHz	$V_{CE} = -20V, I_{C} = -10mA,$ f = 20MHz

6. Measured under pulsed conditions. Pulse width \leq 300 μ s. Duty cycle \leq 2% Note:

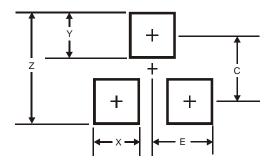


Package Outline Dimensions



	SOT23					
Dim	Min	Max	Тур			
Α	0.37	0.51	0.40			
В	1.20	1.40	1.30			
С	2.30	2.50	2.40			
D	0.89	1.03	0.915			
F	0.45	0.60	0.535			
G	1.78	2.05	1.83			
Н	2.80	3.00	2.90			
J	0.013	0.10	0.05			
K	0.903	1.10	1.00			
K 1	-	-	0.400			
L	0.45	0.61	0.55			
M	0.085	0.18	0.11			
α	0°	8°	-			
All	All Dimensions in mm					

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
Х	0.8
Y	0.9
С	2.0
F	1.35





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