





30V PNP SILICON PLANAR MEDIUM POWER HIGH PERFORMANCE TRANSISTOR

Features and Benefits

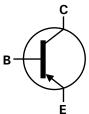
- BV_{CEO} > -30V
- I_C = -1A Continuous Collector Current
- Low saturation voltage V_{CE(sat)} < -350mV @ -1A
- $R_{SAT} = 250 m\Omega$ for a low equivalent on-resistance
- Complementary NPN type: FMMT489
- Low equivalent on-resistance; R_{CE(sat)} = 250mW @ 1A
- Lead Free, RoHS Compliant (Note 1)
- Halogen and Antimony Free "Green" Device (Note 2)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

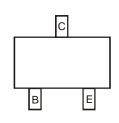
- Case: SOT23
- Case Material: Molded Plastic, "Green" Molding Compound (Note 2). UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Copper Plated Alloy
 42 leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.008 grams (approximate)







Device Circuit



Top View Pin-Out

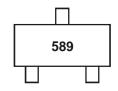
Ordering Information (Note 3)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
FMMT589TA	589	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



589 = Product Type Marking Code





Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Collector-Base Voltage		V _{CBO}	-50	V
Collector-Emitter Voltage		V _{CEO}	-30	V
Emitter-Base Voltage		V _{EBO}	-5	V
Continuous Collector Current	(Note 4)	Ic	-1	А
Peak Pulse Current	·	I _{CM}	-2	А
Base Current		I _B	-200	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit	
Power Dissipation	(Note 4)	D _D	500	mW
Linear Derating Factor	(14010 4)	FD	4	mW/°C
Thermal Resistance, Junction to Ambient	(Note 4)	$R_{ hetaJA}$	250	°C/W
Thermal Resistance, Junction to Lead	(Note 5)	$R_{ heta JL}$	197	°C/W
Operating and Storage Temperature Range	$T_{J_i}T_{STG}$	-55 to +150	°C	

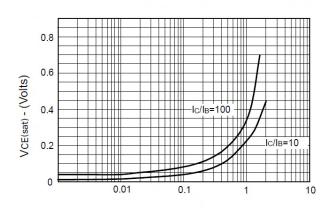
Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage	BV_{CBO}	-50	_	_	V	$I_C = -100 \mu A$
Collector-Emitter Breakdown Voltage (Note 6)	BV _{CEO}	-30	_	_	V	$I_C = -10mA$
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	_	_	V	$I_E = -100 \mu A$
Collector Cutoff Current	I _{CBO}	_	_	-100	nA	$V_{CB} = -30V$
Collector-Emitter Cutoff Current	I _{CES}	_	_	-100	nA	V _{CES} = -30V
Emitter Cutoff Current	I _{EBO}		_	-100	nA	V _{EB} = -4V
ON CHARACTERISTICS (Note 6)						
DC Current Gain	h _{FE}	100 100 80 40	 - -	300 — —	_	$\begin{split} I_{C} &= -1 \text{mA}, \ V_{CE} = -2 \text{V} \\ I_{C} &= -500 \text{mA}, \ V_{CE} = -2 \text{V} \\ I_{C} &= -1 \text{A}, \ V_{CE} = -2 \text{V} \\ I_{C} &= -2 \text{A}, \ V_{CE} = -2 \text{V} \end{split}$
Collector-Emitter Saturation Voltage	$V_{\text{CE(sat)}}$	_ _ _	_ _ _	-0.25 -0.35 -0.65	V	$I_C = -0.5A$, $I_B = -50mA$ $I_C = -1A$, $I_B = -100mA$ $I_C = -2A$, $I_B = -200mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	_	_	-1.2	V	$I_C = -1A$, $I_B = -100mA$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$	_	_	-1.1	V	$I_C = -1A$, $V_{CE} = -2V$
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C_{obo}	_	_	15	pF	$V_{CB} = -10V$, $f = 1MHz$
Current Gain-Bandwidth Product	f _T	100	_	_	MHz	$V_{CE} = -5V$, $I_{C} = -100$ mA, $f = 100$ MHz

Notes:

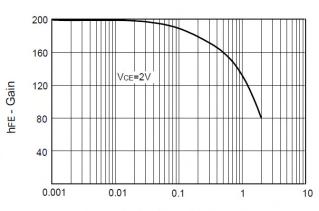
- 4. For a device surface mounted on a 15mm x 15mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions; the device is measured when operating in a steady-state condition.
- 5. Thermal resistance from junction to solder-point (at the end of the collector lead).
- 6. Measured under pulsed conditions. Pulse width ≤ 300µs. Duty cycle ≤2%





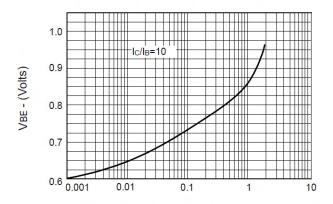
Ic - Collector Current (Amps)

VCE(sat) v IC



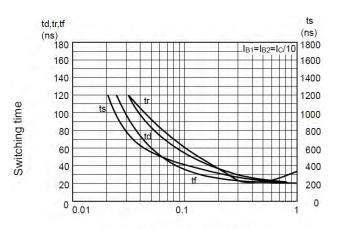
Ic - Collector Current (Amps)

hFE v IC



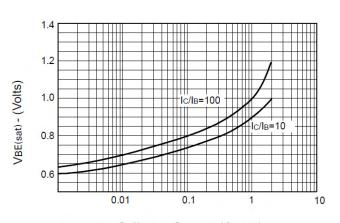
Ic - Collector Current (Amps)

VBE(on) v IC



Ic - Collector Current (Amps)

Switching Speeds

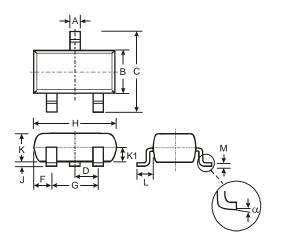


Ic - Collector Current (Amps)

VBE(sat) v IC

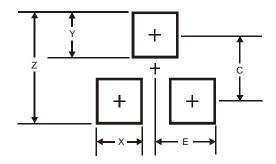


Package Outline Dimensions



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		
7	0.013	0.10	0.05		
K	0.903	1.10	1.00		
K1	-	-	0.400		
L	0.45	0.61	0.55		
М	0.085	0.18	0.11		
α	0°	8°	-		
All Dimensions in mm					

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
Х	0.8
Υ	0.9
С	2.0
E	1.35





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многоканальный

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