



300V PNP HIGH VOLTAGE TRANSISTOR IN SOT23

Features

- BV_{CEO} > -300V
- I_C = -200mA High Continuous Collector Current
- Complementary Type FMMTA42
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- An Automotive-Compliant Part is Available Under Separate Datasheet (FMMTA92Q)

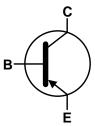
Mechanical Data

- Case: SOT23
- Case Material: Molded Plastic, "Green" Molding Compound UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208@3
- Weight 0.008 grams (Approximate)

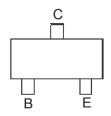




Top View



Device Symbol



Top View Pin-Out

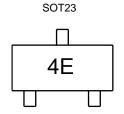
Ordering Information (Note 4)

Part Number	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity Per Reel
FMMTA92TA	AEC-Q101	4E	7	8	3,000

Notes:

- 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
- 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- 4. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information



4E = Product Type Marking Code



Absolute Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-300	V
Collector-Emitter Voltage	V _{CEO}	-300	V
Emitter-Base Voltage	V_{EBO}	-5	V
Continuous Collector Current	Ι _C	-200	mA

Thermal Characteristics (@TA = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit		
Power Dissipation	(Note 5)	D-	310	mW	
ower Dissipation	(Note 6)	P _D	350	11100	
Thermal Resistance, Junction to Ambient	(Note 5)	_	403	°C/W	
Thermal Resistance, Junction to Ambient	(Note 6)	R _{0JA}	357	-C/VV	
Thermal Resistance, Junction to Lead (Note 7)		$R_{ heta JL}$	350	°C/W	
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C		

ESD Ratings (Note 8)

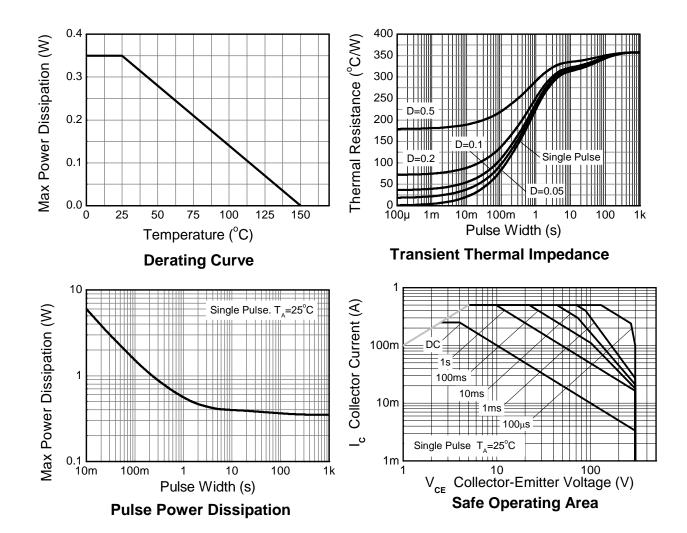
Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	С

Notes:

- 5. For a device mounted on minimum recommended pad layout 1oz copper that is on a single-sided 1.6mm FR-4 PCB; device is measured under still air conditions whilst operating in steady state condition.
- 6. Same as note 5, except the device is mounted on 15mm x 15mm 1oz copper.
- 7. Thermal resistance from junction to solder-point (at the end of the collector lead).
- 8. Refer to JEDEC specification JESD22-A114 and JESD22-A115.



Thermal Characteristics and Derating Information





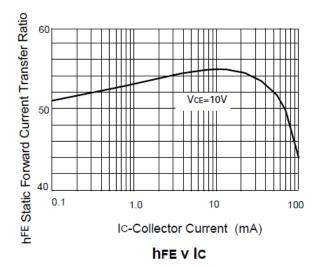
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

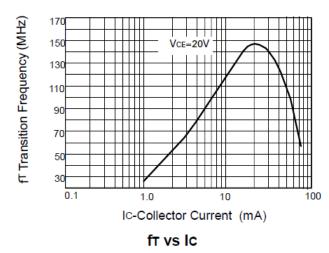
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CBO}	-300	_	_	V	$I_C = -100 \mu A$
Collector-Emitter Breakdown Voltage (Note 9)	BV _{CEO}	-300	_	_	V	I _C = -1mA
Emitter-Base Breakdown Voltage	BV _{EBO}	-5	_	_	V	$I_E = -100 \mu A$
Collector Cutoff Current	I _{CBO}	_		-0.25	μΑ	V _{CB} = -200V V _{CB} = -160V
Emitter Cutoff Current	I _{EBO}	_	_	-0.10	nA	$V_{EB} = -3V$
Static Forward Current Transfer Ratio (Note 9)	h _{FE}	25 40 25		_ _ _	_	$I_C = -1mA$, $V_{CE} = -10V$ $I_C = -10mA$, $V_{CE} = -10V$ $I_C = -30mA$, $V_{CE} = -10V$
Collector-Emitter Saturation Voltage (Note 9)	V _{CE(sat)}	_	_	-0.5	V	$I_C = -20 \text{mA}, I_B = -2 \text{mA}$
Base-Emitter Saturation Voltage (Note 9)	V _{BE(sat)}	_	_	-0.9	V	$I_C = -20 \text{mA}, I_B = -2 \text{mA}$
Output Capacitance	C_{obo}	_	_	6	pF	V _{CB} = -20V, f = 1MHz
Transition Frequency	f _T	50	-	_	MHz	$V_{CE} = -20V, I_{C} = -10mA,$ f = 20MHz

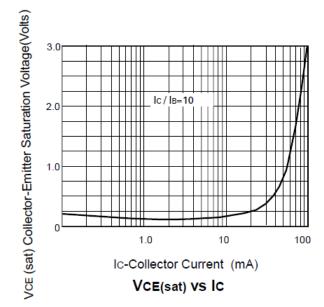
Note: 9. Measured under pulsed conditions. Pulse width \leq 300 μ s. Duty cycle \leq 2%.



Typical Electrical Characteristics ($@T_A = +25^{\circ}C$, unless otherwise specified.)





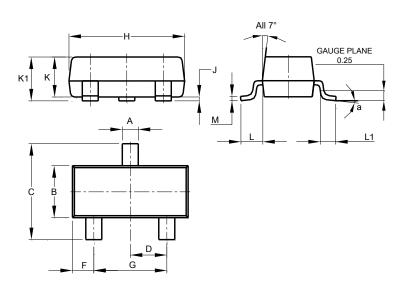




Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT23

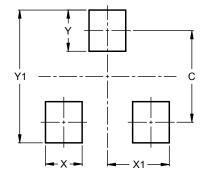


SOT23					
Dim	Min	Max	Тур		
Α	0.37	0.51	0.40		
В	1.20	1.40	1.30		
С	2.30	2.50	2.40		
D	0.89	1.03	0.915		
F	0.45	0.60	0.535		
G	1.78	2.05	1.83		
Н	2.80	3.00	2.90		
J	0.013	0.10	0.05		
K	0.890	1.00	0.975		
K1	0.903	1.10	1.025		
L	0.45	0.61	0.55		
L1	0.25	0.55	0.40		
М	0.085	0.150	0.110		
а	0°	8°			
All Dimensions in mm					

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT23



Dimensions	Value (in mm)
С	2.0
Х	0.8
X1	1.35
Υ	0.9
Y1	2.9

Note: For high voltage applications, the appropriate industry sector guidelines should be considered with regards to creepage and clearance distances between device Terminals and PCB tracking.



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