

Features

- Epitaxial Planar Die Construction
- Ideal for Medium Power Amplification and Switching
- "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
- 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 annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.008 grams (approximate)



Ordering Information (Note 3)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
DSS5320T-7	ZP4	7	8mm	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



2009		2010	2011		2012	2013		2014	2015		2016
W		Х	Y		Z	А		В	С		D
Jan	Feb	Mar	Apr	May	Jun	Jul	Aua	Sep	Oct	Nov	Dec
1	2	3	4	5	6	7	8	9	0	N	D
		W	W X	W X Y	W X Y	W X Y Z	W X Y Z A	W X Y Z A	W X Y Z A B	W X Y Z A B C	W X Y Z A B C Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov



Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	-20	V
Collector-Emitter Voltage	V _{CEO}	-20	V
Emitter-Base Voltage	V _{EBO}	-5	V
Peak Pulse Current	I _{CM}	-5	A
Repetitive Peak Pulse Current (Note 4)	ICRP	-3	А
Continuous Collector Current	Ic	-2	A
Base Current	IB	-0.5	А

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5) @ $T_A = 25^{\circ}C$	PD	600	mW
Thermal Resistance, Junction to Ambient Air (Note 4) @ T _A = 25°C	$R_{ ext{ heta}JA}$	209	°C/W
Operating and Storage Temperature Range	TJ, T _{STG}	-55 to +150	°C

Notes:

Operated under pulsed conditions: pulse width ≤100ms, duty cycle ≤ 0.25.
Device mounted on 15mm x 15mm x1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.







Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
		_	_	-100	nA	$V_{CB} = -20V, I_E = 0$
Collector-Base Cutoff Current	I _{CBO}	_	_	-50	μΑ	$V_{CB} = -20V, I_E = 0, T_A = 150^{\circ}C$
Emitter-Base Cutoff Current		_	—	-100	nA	$V_{EB} = -5V, I_{C} = 0$
Collector-Base Breakdown Voltage	BV _{CBO}	-20	—	—	V	I _C = -100μA
Collector-Emitter Breakdown Voltage (Note 6)	BV _{CEO}	-20	_	_	V	I _C = -10mA
Emitter-Base Breakdown Voltage	BV _{EBO}	-5	_	_	V	I _E = -100μA
		220	_	_		$V_{CE} = -2V, I_{C} = -0.1A$
		220	_	_		$V_{CE} = -2V, I_{C} = -0.5A$
DC Current Gain (Note 5)	h _{FE}	200	_	_	_	$V_{CE} = -2V, I_{C} = -1A$
		150	_	_		$V_{CE} = -2V, I_{C} = -2A$
		100	_	_		$V_{CE} = -2V, I_{C} = -3A$
		_	_	-70		I _C = -0.5A, I _B = -50mA
		_	_	-130	mV	$I_{\rm C} = -1A, I_{\rm B} = -50 {\rm mA}$
Collector-Emitter Saturation Voltage (Note 6)	V _{CE(sat)}	_	_	-230		I _C = -2A, I _B = -100mA
		_	_	-210		I _C = -2A, I _B = -200mA
		_	_	-300		I _C = -3A, I _B = -300mA
Equivalent On-Resistance	R _{CE(sat)}	_	_	105	mΩ	I _E = -2A, I _B = -200mA
Base-Emitter Saturation Voltage		_	_	-1.1	V	I _C = -2A, I _B = -100mA
Base-Emilier Saluralion Vollage	V _{BE(sat)}	_	_	-1.2	V	I _C = -3A, I _B = -300mA
Base-Emitter Turn-on Voltage	V _{BE(on)}	_	_	-1.2	V	$V_{CE} = -2V, I_{C} = -1A$
Transition Frequency	f _T	100	180	_	MHz	$V_{CE} = -5V, I_C = -100mA,$ f = 100MHz
Output Capacitance	C _{ob}	_	25	50	pF	$V_{CB} = -10V, f = 1MHz$
Turn-On Time	t _{on}	_	67	_	ns	
Delay Time	t _d	_	23	_	ns]
Rise Time	tr	_	44	_	ns	$V_{CC} = -10V$, $I_{C} = -1A$,
Turn-Off Time	t _{off}	_	224	—	ns	$I_{B1} = -I_{B2} = -50 \text{mA}$
Storage Time	t _s	_	184	_	ns]
Fall Time	t _f	_	40	—	ns	1

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









Package Outline Dimensions



Тур

0.40

1.30

2.40

0.915

0.535

1.83

2.90

0.05

1.00

0.400

0.55

0.11



Suggested Pad Layout



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

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