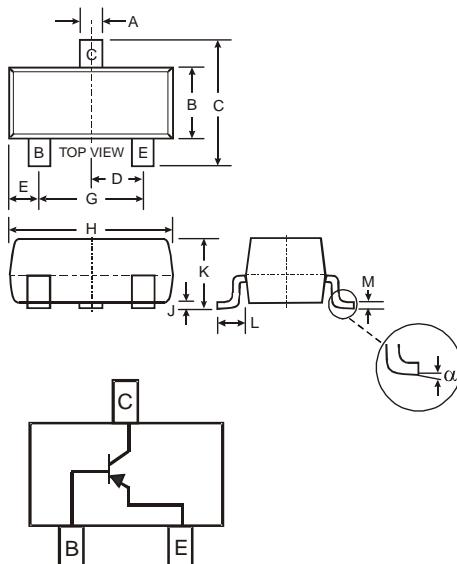


Features

- Epitaxial Planar Die Construction
- Complementary NPN Type Available (DN350T05)
- Ideal for Medium Power Amplification and Switching
- Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 2, 3 and 4)**
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminal Connections: See Diagram
- Terminals: Finish — Matte Tin Finish annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: K3U - See Page 2
- Ordering & Date Code Information: See Page 2
- Weight: 0.008 grams (approximate)



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
α	0°	8°

All Dimensions in mm

Maximum Ratings

@ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	DP350T05	Unit
Collector-Base Voltage	V_{CBO}	-350	V
Collector-Emitter Voltage	V_{CEO}	-350	V
Emitter-Base Voltage	V_{EBO}	-5.0	V
Continuous Collector Current (Note 1)	I_C	-500	mA
Power Dissipation (Note 1)	P_D	300	mW
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	417	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

- Notes:
1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
 2. No purposefully added lead, Halogen and Antimony Free.
 3. Diode's Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
 4. Product is manufactured with Green Molding Compound and does not contain Halogens or Sb_2O_3 Fire Retardants.

Electrical Characteristics

@ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 5)					
Collector-Base Breakdown Voltage	$V_{(\text{BR})\text{CBO}}$	-350	—	V	$I_C = -100\mu\text{A}, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(\text{BR})\text{CEO}}$	-350	—	V	$I_C = -1.0\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(\text{BR})\text{EBO}}$	-5.0	—	V	$I_E = -10\mu\text{A}, I_C = 0$
Collector Cutoff Current	I_{CBO}	—	-50	nA	$V_{\text{CB}} = -200\text{V}, I_E = 0$
Collector Cutoff Current	I_{EBO}	—	-50	nA	$V_{\text{CE}} = -3.0\text{V}, I_C = 0$
ON CHARACTERISTICS (Note 5)					
DC Current Gain	h_{FE}	20 30 30 20 15	— — 200 200 —	—	$I_C = -1.0\text{mA}, V_{\text{CE}} = -10\text{V}$ $I_C = -10\text{mA}, V_{\text{CE}} = -10\text{V}$ $I_C = -30\text{mA}, V_{\text{CE}} = -10\text{V}$ $I_C = -50\text{mA}, V_{\text{CE}} = -10\text{V}$ $I_C = -100\text{mA}, V_{\text{CE}} = -10\text{V}$
Collector-Emitter Saturation Voltage	$V_{\text{CE}(\text{SAT})}$	— — — — —	-0.30 -0.35 -0.50 -1.0	V	$I_C = -10\text{mA}, I_B = -1.0\text{mA}$ $I_C = -20\text{mA}, I_B = -2.0\text{mA}$ $I_C = -30\text{mA}, I_B = -3.0\text{mA}$ $I_C = -50\text{mA}, I_B = -5.0\text{mA}$
Base-Emitter Saturation Voltage	$V_{\text{BE}(\text{SAT})}$	— — —	-0.75 -0.85 -0.90	V	$I_C = -10\text{mA}, I_B = -1.0\text{mA}$ $I_C = -20\text{mA}, I_B = -2.0\text{mA}$ $I_C = -30\text{mA}, I_B = -3.0\text{mA}$
Base-Emitter On Voltage	$V_{\text{BE}(\text{ON})}$	—	-2.0	V	$I_C = -100\text{mA}, V_{\text{CE}} = -10\text{V}$
SMALL SIGNAL CHARACTERISTICS					
Output Capacitance	C_{obo}	—	7.0	pF	$V_{\text{CB}} = -20\text{V}, f = 1.0\text{MHz}, I_E = 0$
Transition Frequency	f_T	50	—	MHz	$V_{\text{CE}} = -10\text{V}, I_C = -20\text{mA}$

Notes: 5. Short duration pulse test used to minimize self-heating effect.

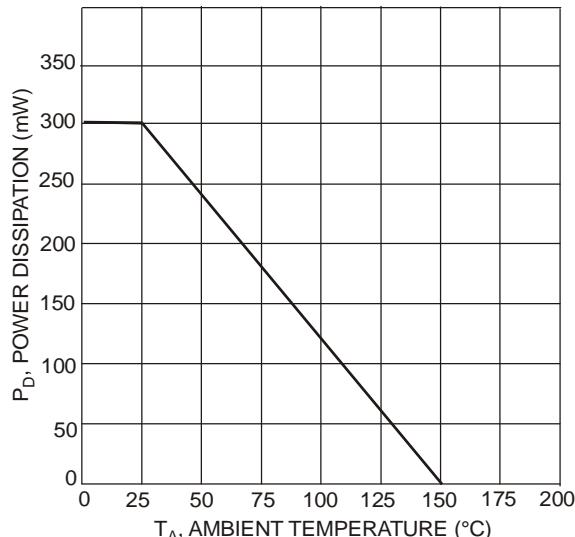


Fig. 1, Max Power Dissipation vs. Ambient Temperature

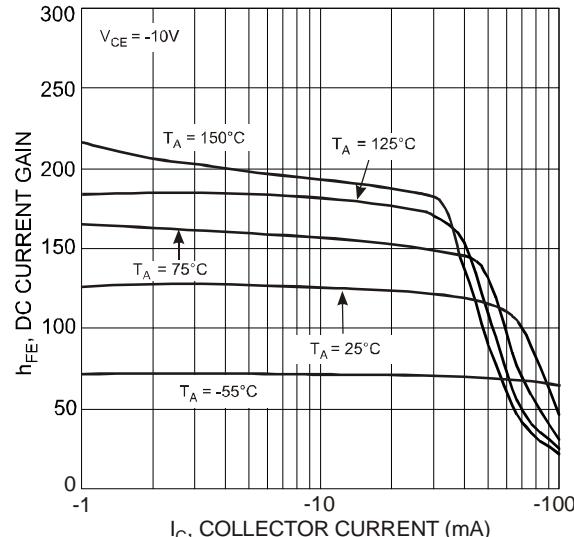


Fig. 2, DC Current Gain vs. Collector Current

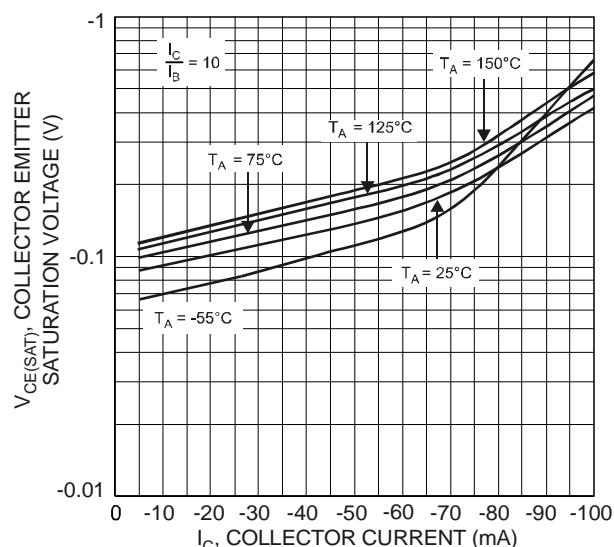


Fig. 3, Collector-Emitter Saturation Voltage vs. Collector Current

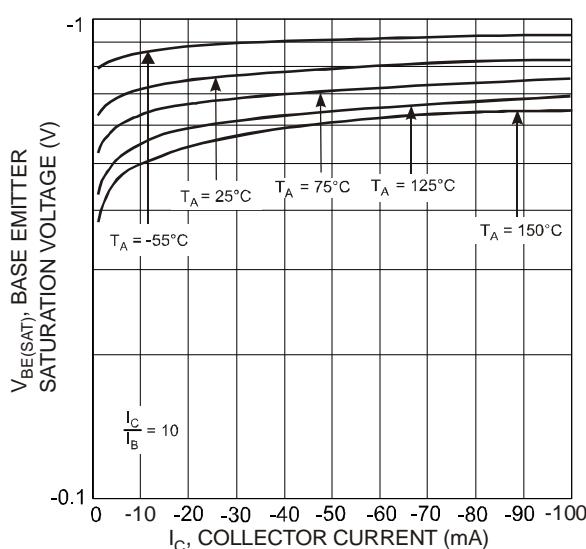


Fig. 4, Base Emitter Saturation Voltage vs. Collector Current

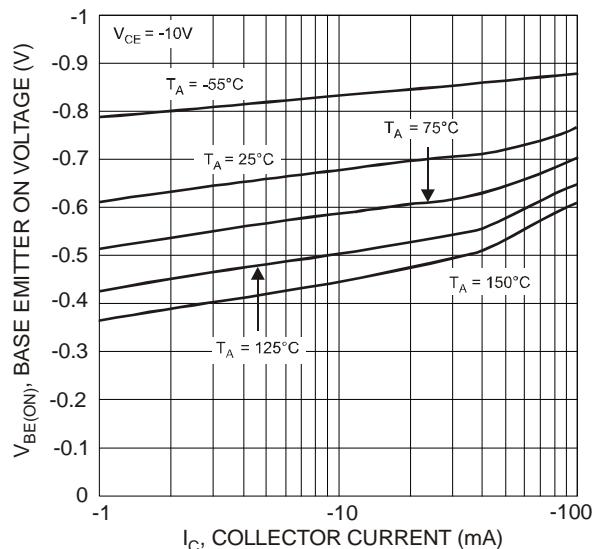


Fig. 5, Base-Emitter On Voltage vs. Collector Current

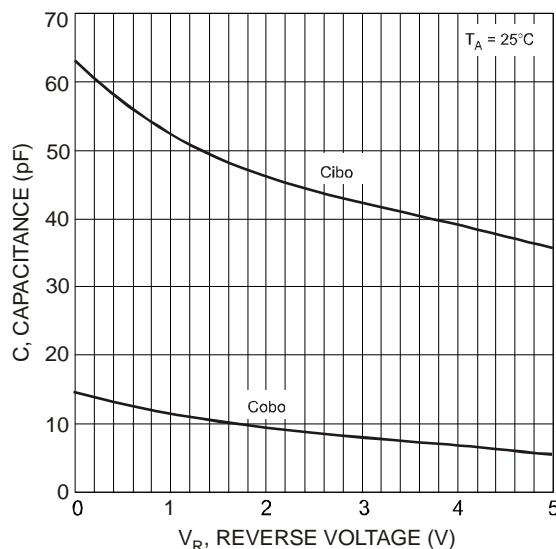


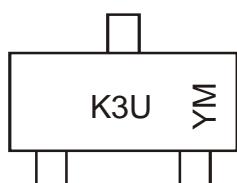
Fig. 6, Capacitance vs. Reverse Voltage

Ordering Information (Note 6)

Device	Packaging	Shipping
DP350T05-7	SOT-23	3000/Tape & Reel

Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



K3U = Product Type Marking Code
 YM = Date Code Marking
 Y = Year ex: S = 2005
 M = Month ex: 9 = September

Date Code Key

Year	2005	2006	2007	2008	2009	2010	2011	2012				
Code	S	T	U	V	W	X	Y	Z				
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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