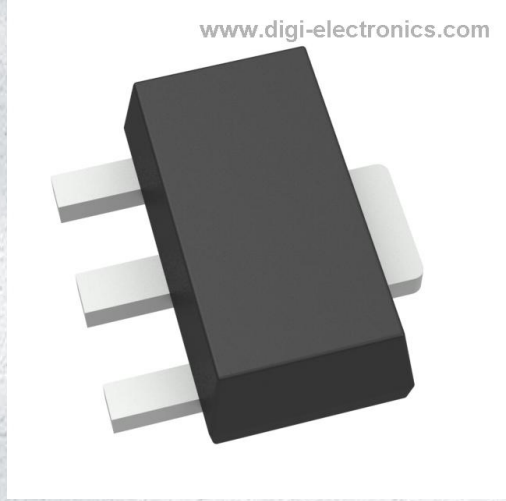
DXT2907A-13 Datasheet



https://www.DiGi-Electronics.com

DiGi Electronics Part Number	DXT2907A-13-DG
Manufacturer	Diodes Incorporated
Manufacturer Product Number	DXT2907A-13
Description	TRANS PNP 60V 0.6A SOT89-3
Detailed Description	Bipolar (BJT) Transistor PNP 60 V 600 mA 200MHz 1 W Surface Mount SOT-89-3

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

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Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
DXT2907A-13	Diodes Incorporated
Series:	Product Status:
-	Active
Transistor Type:	Current - Collector (Ic) (Max):
PNP	600 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
60 V	1.6V @ 50mA, 500mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
10nA (ICBO)	100 @ 150mA, 10V
Power - Max:	Frequency - Transition:
1 W	200MHz
Operating Temperature:	Mounting Type:
-55°C ~ 150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
TO-243AA	SOT-89-3
Base Product Number:	
DXT2907	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.29.0075	

Lead-free Green

DXT2907A

60V PNP TRANSISTOR IN SOT89

Features

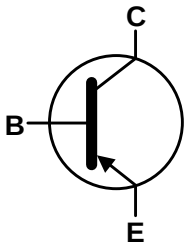
- BV_{CEO} > -60V
- Ideal for Medium Power Switching or Amplification Applications
- Ideally Suited for Automated Assembly Processes
- Complementary NPN Type Available (DXT2222A)
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

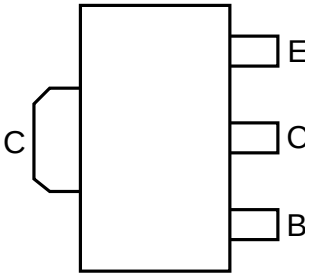
- Case: SOT89
- Case Material: Molded Plastic, "Green" Molding Compound UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.072 grams (Approximate)

SOT89

Top View



Device Symbol



Top View
Pin-Out

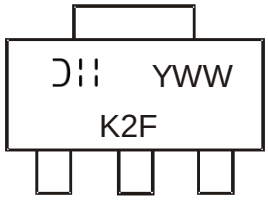
Ordering Information (Note 4)

Part Number	Marking	Reel Size (inches)	Tape Width (mm)	Quantity Per Reel
DXT2907A-13	K2F	13	12	2,500

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. 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 http://www.diodes.com/products/packages.html.

Marking Information

SOT89



K2F = Product Type Marking Code
YWW = Date Code Marking
Y = Last Digit of Year (ex: 5 = 2015)
WW = Week Code (01 to 53)

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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-600	mA
Peak Collector Current	I_{CM}	-800	mA

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

Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 5)	P_D	0.75	W
	(Note 6)		1.2	
Thermal Resistance, Junction to Ambient Air	(Note 5)	$R_{\theta JA}$	166	°C/W
	(Note 6)		104	
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	°C

ESD Ratings (Note 7)

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	C

Notes:
5. For a device mounted with the exposed collector pad 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 a steady-state.
6. Same as note 5, except the device is mounted with the exposed collector pad on 25mm x 25mm 1oz copper.
7. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage	BV_{CBO}	-60	-120	—	V	I_C = -100µA
Collector-Emitter Breakdown Voltage (Note 8)	BV_{CEO}	-60	-80	—	V	I_C = -10mA
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	-8.8	—	V	I_E = -100µA
Collector Cut-off Current	I_{CBO}	—	-1	-50	nA	V_{CB} = -50V
		—	—	-50	µA	V_{CB} = -50V, T_A = +100°C
Collector Cutoff Current	I_{CEX}	—	—	-50	nA	V_{CE} = -30V, $V_{EB(OFF)}$ = -0.5V
Emitter Cut-off Current	I_{EBO}	—	—	-50	nA	V_{EB} = -5V
ON CHARACTERISTICS (Note 8)						
Static Forward Current Transfer Ratio	h_{FE}	75	208	—	—	I_C = -100µA, V_{CE} = -10V
		100	207	—	—	I_C = -1mA, V_{CE} = -10V
		100	202	—	—	I_C = -10mA, V_{CE} = -10V
		100	169	300	—	I_C = -150mA, V_{CE} = -10V
		50	103	—	—	I_C = -500mA, V_{CE} = -10V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	-130	-400	mV	I_C = -150mA, I_B = -15mA
		—	-0.4	-1.6	V	I_C = -500mA, I_B = -50mA
Base-Emitter Saturation Voltage	$V_{BE(SAT))}$	—	-0.86	-1.3	V	I_C = -150mA, I_B = -15mA
		—	-1	-2.6	V	I_C = -500mA, I_B = -50mA
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C_{obo}	—	—	8	pF	V_{CB} = -10V, I_E = 0, f = 1MHz
Input Capacitance	C_{ibo}	—	—	30	pF	V_{EB} = -2V, f = 1MHz, I_C = 0
Current Gain-Bandwidth Product	f_T	200	—	—	MHz	V_{CE} = -20V, I_C = -50mA, f = 100MHz
SWITCHING CHARACTERISTICS						
Turn-On Time	t_{ON}	—	—	45	ns	V_{CC} = -30V, I_C = -150mA, I_{B1} = -15mA
Delay Time	t_D	—	—	10	ns	
Rise Time	t_R	—	—	40	ns	
Turn-Off Time	t_{OFF}	—	—	100	ns	V_{CC} = -6V, I_C = -150mA, I_{B1} = I_{B2} = -15mA
Storage Time	t_S	—	—	80	ns	
Fall Time	t_F	—	—	30	ns	

Note: 8. Measured under pulsed conditions. Pulse width ≤ 300µs. Duty cycle ≤ 2%.

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

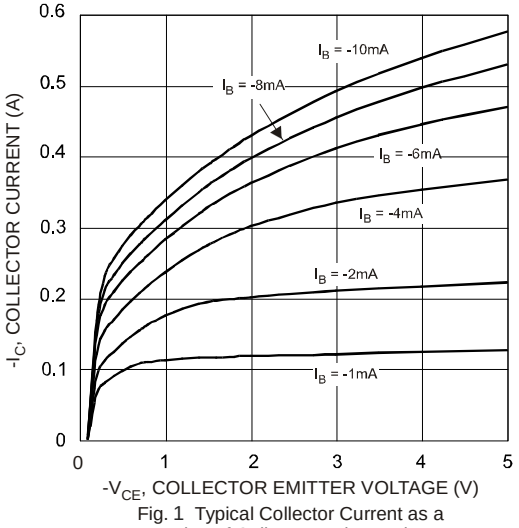

Fig. 1 Typical Collector Current as a Function of Collector Emitter Voltage

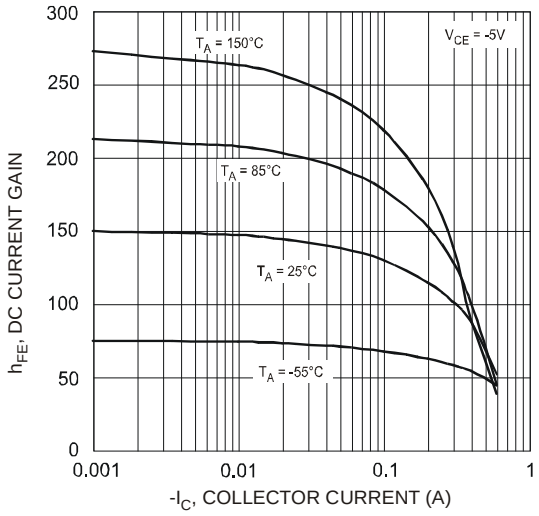

Fig. 2 Typical DC Current Gain vs. Collector Current

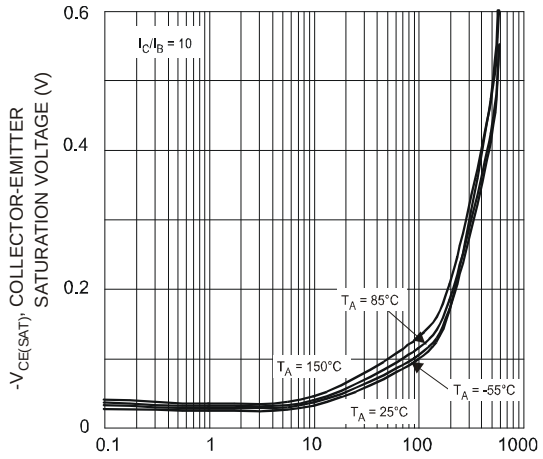

Fig. 3 Typical Collector-Emitter Saturation Voltage vs. Collector Current

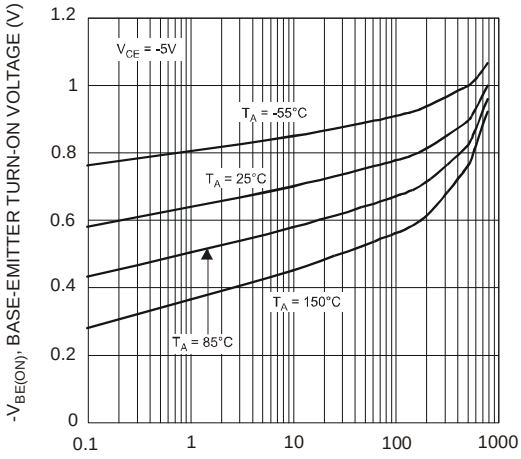

Fig. 4 Typical Base-Emitter Turn-On Voltage vs. Collector Current

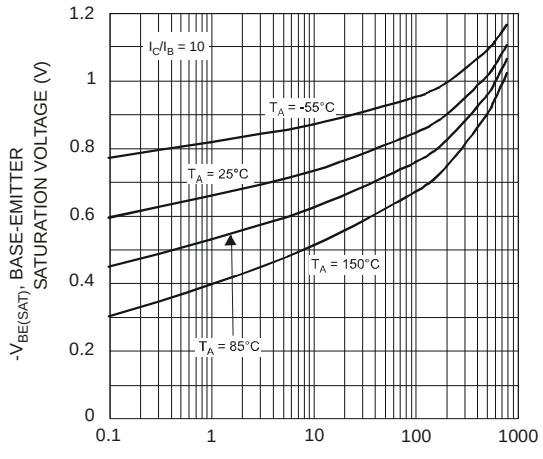

Fig. 5 Typical Base-Emitter Saturation Voltage vs. Collector Current

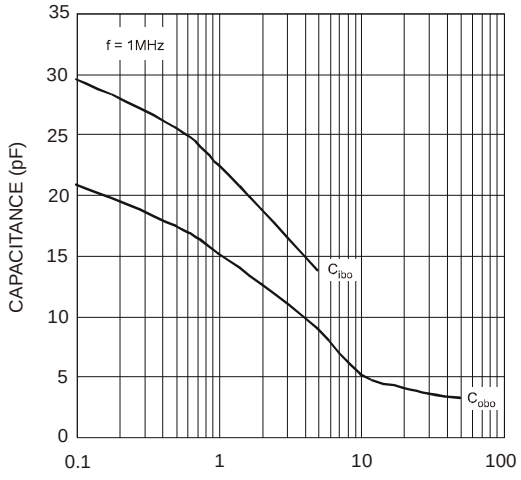

Fig. 6 Typical Capacitance Characteristics

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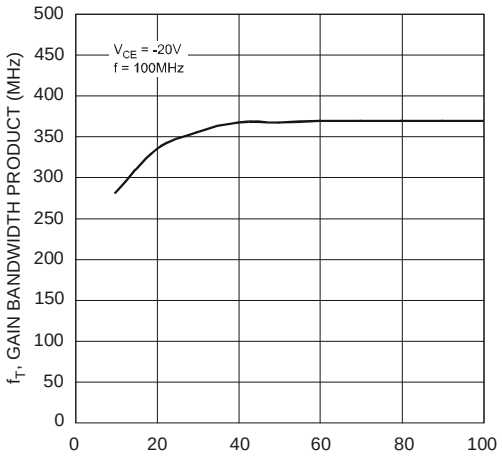

Fig. 7 Typical Gain-Bandwidth Product vs. Collector Current

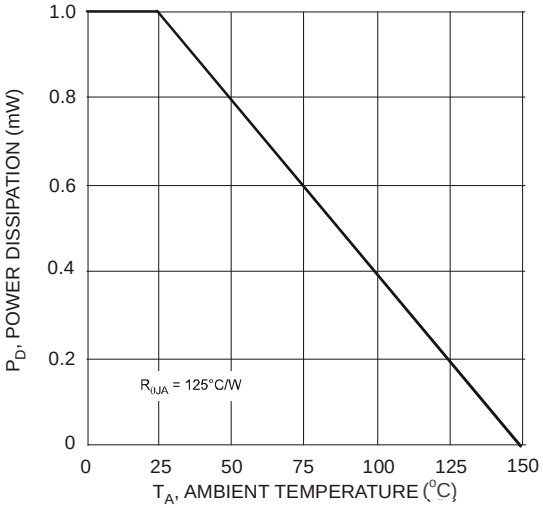

Fig. 8 Power Dissipation vs. Ambient Temperature

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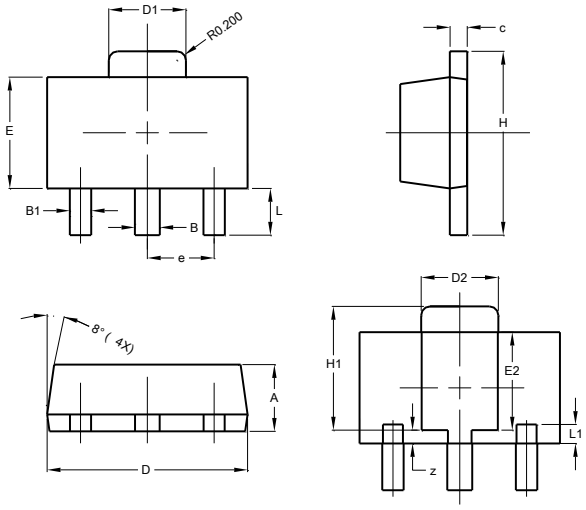
Package Outline Dimensions

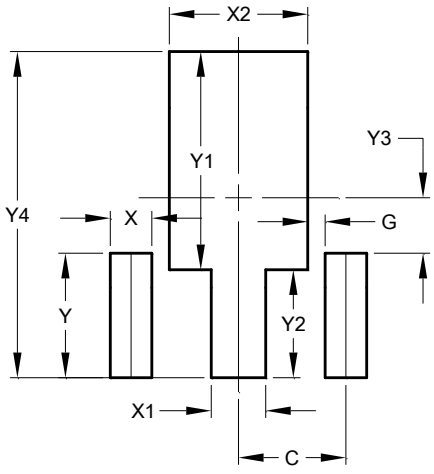
Please see AP02001 at http://www.diodes.com/_files/datasheets/ap02001.pdf for the latest version.



SOT89			
Dim	**Min**	**Max**	**Typ**
A	1.40	1.60	1.50
B	0.50	0.62	0.56
B1	0.42	0.54	0.48
c	0.35	0.43	0.38
D	4.40	4.60	4.50
D1	1.62	1.83	1.733
D2	1.61	1.81	1.71
E	2.40	2.60	2.50
E2	2.05	2.35	2.20
e	-	-	1.50
H	3.95	4.25	4.10
H1	2.63	2.93	2.78
L	0.90	1.20	1.05
L1	0.327	0.527	0.427
z	0.20	0.40	0.30
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/_files/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
C	1.500
G	0.244
X	0.580
X1	0.760
X2	1.933
Y	1.730
Y1	3.030
Y2	1.500
Y3	0.770
Y4	4.530

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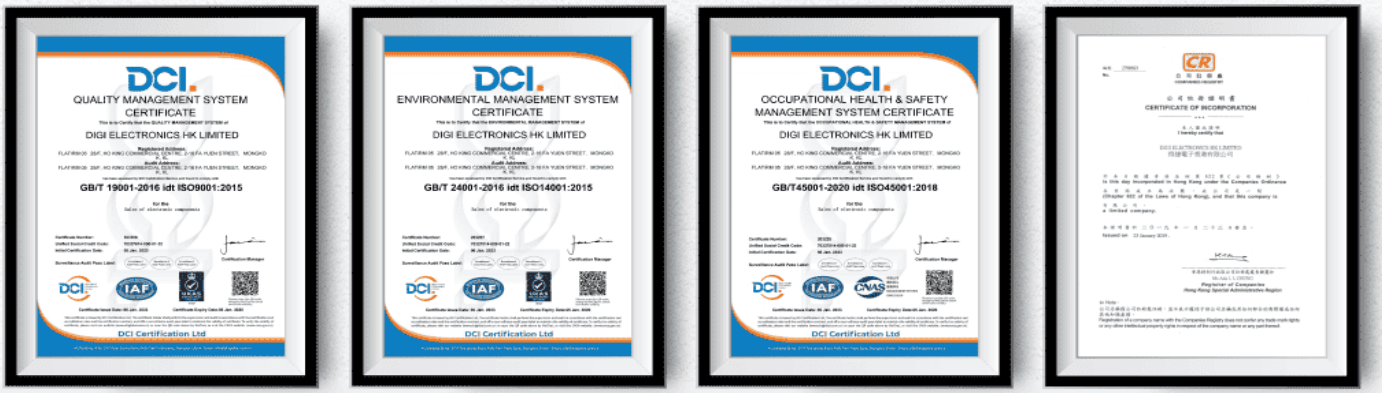

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