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With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

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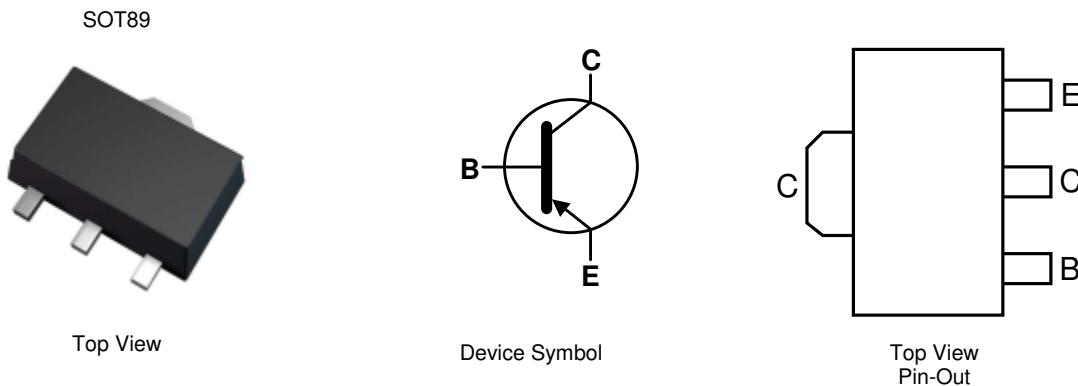
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

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 ③
- Weight: 0.072 grams (Approximate)



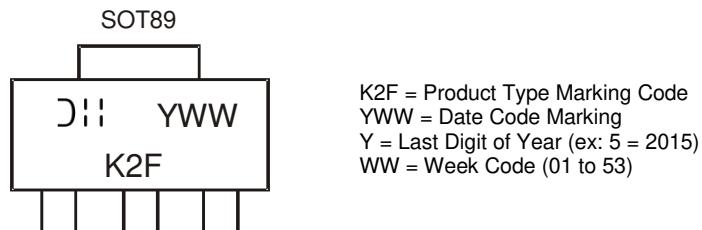
Ordering Information (Note 4)

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



Absolute Maximum Ratings (@ $T_A = +25^\circ\text{C}$, 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 (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation	P_D	0.75	W
		1.2	
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	166	°C/W
		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.

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

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

Note: 8. Measured under pulsed conditions. Pulse width $\leq 300\mu\text{s}$. Duty cycle $\leq 2\%$.

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

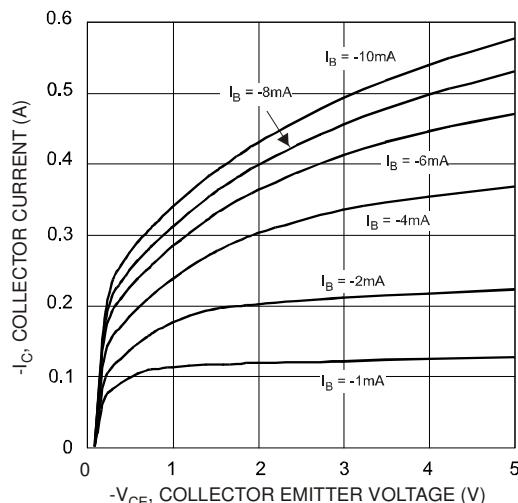


Fig. 1 Typical Collector Current as a Function of Collector Emitter Voltage

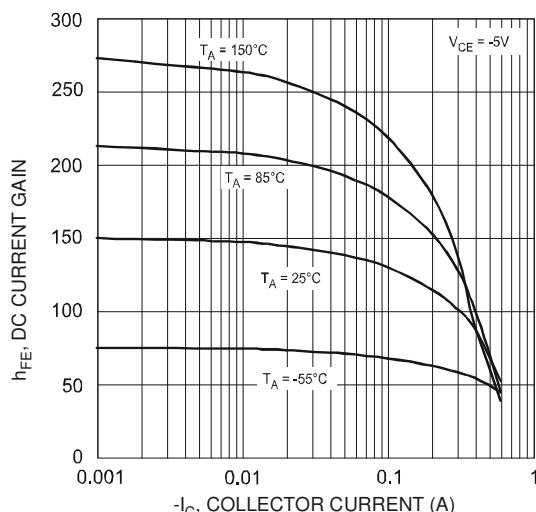


Fig. 2 Typical DC Current Gain vs. Collector Current

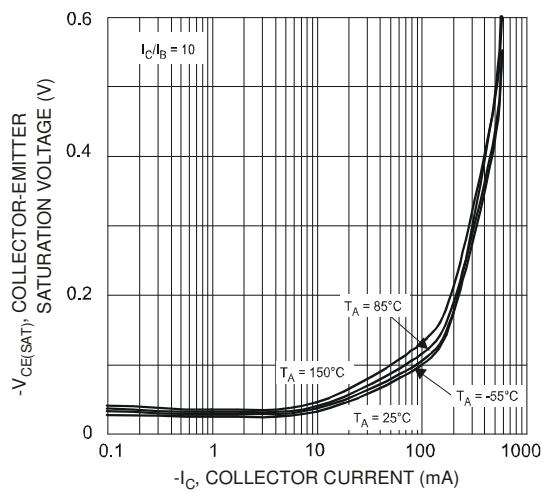


Fig. 3 Typical Collector-Emitter Saturation Voltage vs. Collector Current

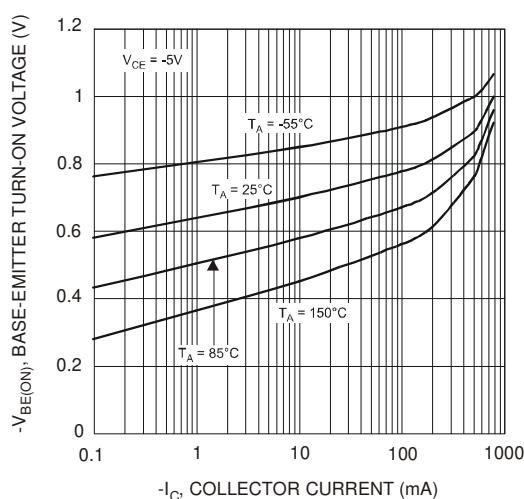


Fig. 4 Typical Base-Emitter Turn-On Voltage vs. Collector Current

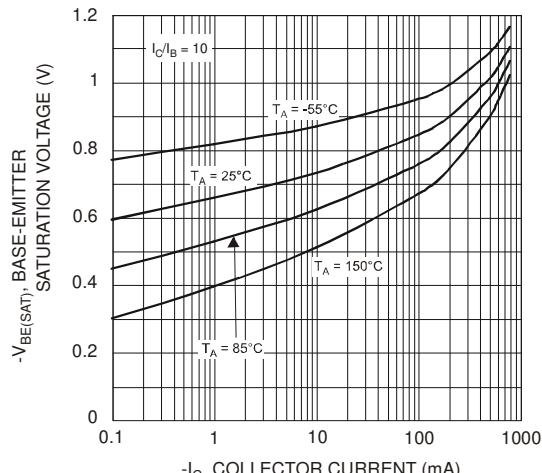


Fig. 5 Typical Base-Emitter Saturation Voltage vs. Collector Current

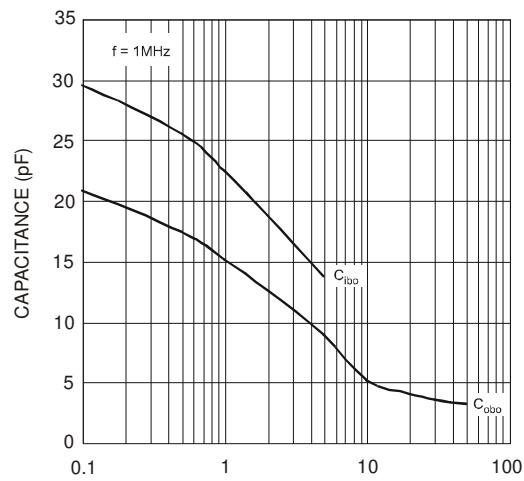


Fig. 6 Typical Capacitance Characteristics

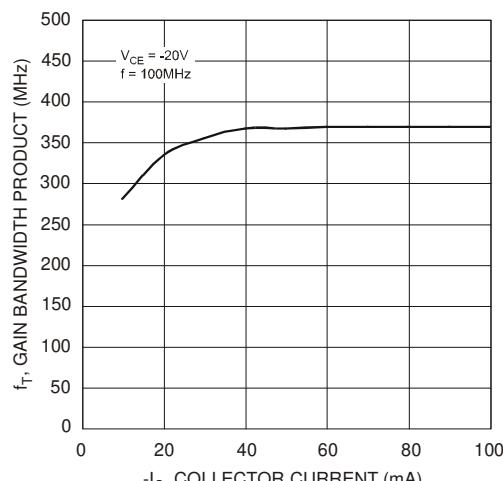


Fig. 7 Typical Gain-Bandwidth Product vs. Collector Current

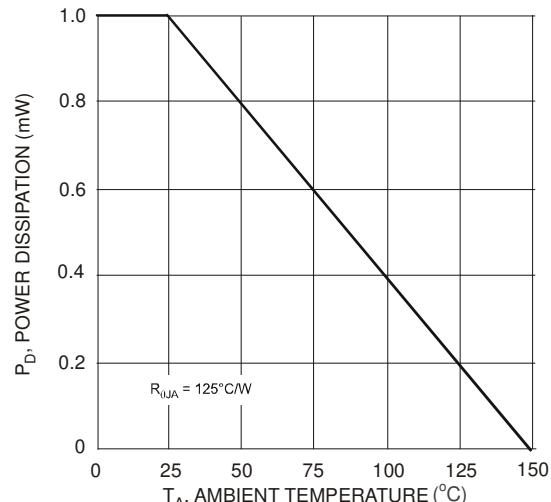
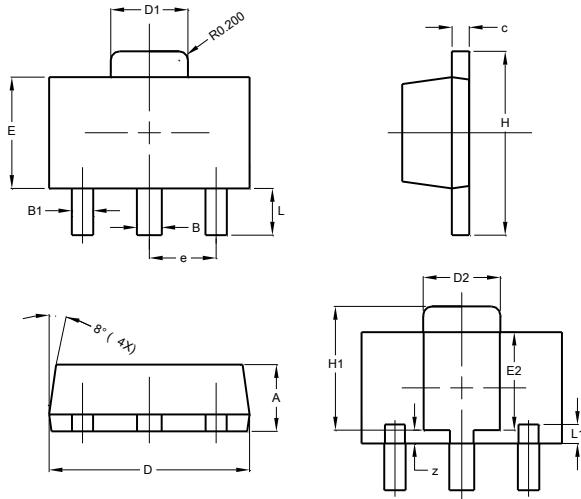


Fig. 8 Power Dissipation vs. Ambient Temperature

Package Outline Dimensions

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

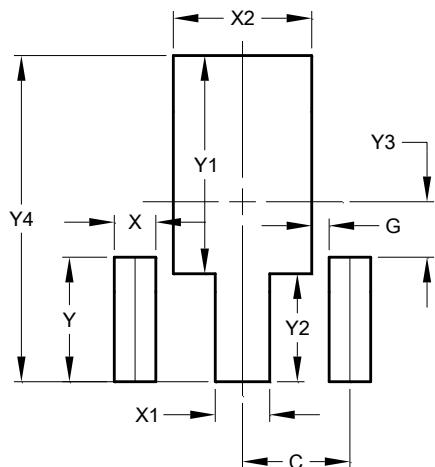


SOT89			
Dim	Min	Max	Typ
A	1.40	1.60	1.50
B	0.50	0.62	0.56
B1	0.42	0.54	0.48
C	0.35	0.43	0.38
D	4.40	4.60	4.50
D1	1.62	1.83	1.733
D2	1.61	1.81	1.71
E	2.40	2.60	2.50
E2	2.05	2.35	2.20
e	-	-	1.50
H	3.95	4.25	4.10
H1	2.63	2.93	2.78
L	0.90	1.20	1.05
L1	0.327	0.527	0.427
z	0.20	0.40	0.30

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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