



## JDTC143XWD

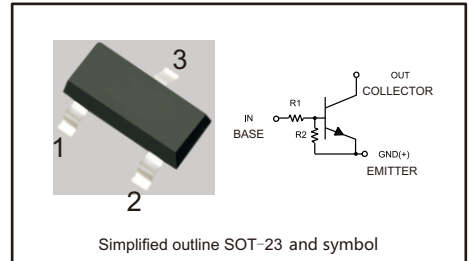
NPN Digital Transistor

### FEATURES

- Epitaxial Planar Die Construction
- Built-In Biasing Resistors
- Simplifies Circuit Design
- Reduces Board Space and Component Count

### PINNING

PIN	DESCRIPTION
1	BASE
2	EMITTER
3	COLLECTOR



### Absolute Maximum Ratings And Characteristics ( Ta = 25°C)

Parameter	Symbol	Value	Unit	
<b>OFF CHARACTERISTICS</b>				
Collector-Base Voltage	$V_{CBO}$	50	V	
Collector-Emitter Voltage	$V_{CEO}$	50	V	
Collector Current Continuous	$I_C$	100	mA	
Input Forward Voltage	$V_{IN(fwd)}$	20	V	
Input Reverse Voltage	$V_{IN(rev)}$	7	V	
Power Dissipation	$P_D$	246	mW	
		400		
		Derate above 25°C	2	mW/°C
			3.2	
Thermal Resistance-Junction to Case	$R_{\theta JA}$	508	°C/W	
		311		
Thermal Resistance-Junction to Lead	$R_{\theta JL}$	174	°C/W	
		208		
Junction and Storage Temperature Range	$T_j, T_{stg}$	-55 to +150	°C	

Notes: 1.FR-4 @ Minimum Pad.  
2.FR-4 @ 1.0 x 1.0 Inch Pad.  
3.Pulsed Condition: Pulse Width = 300 msec, Duty Cycle 2%

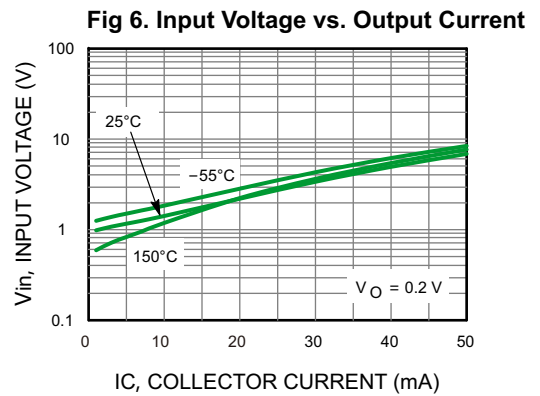
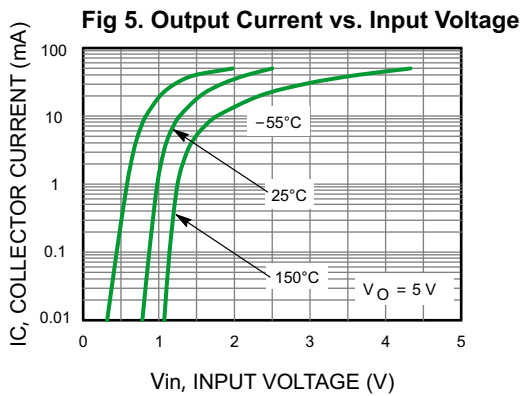
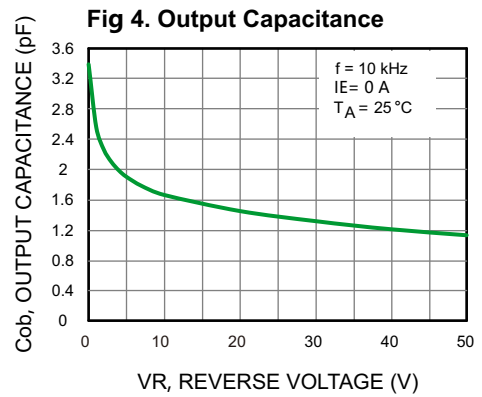
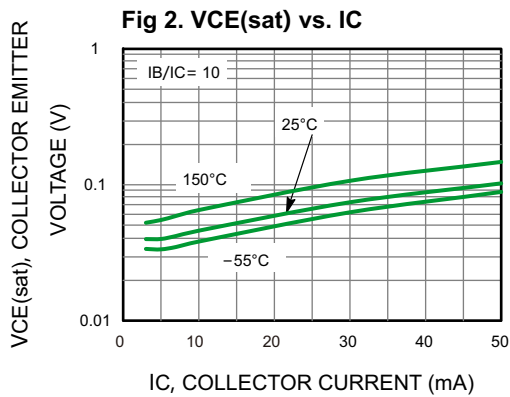
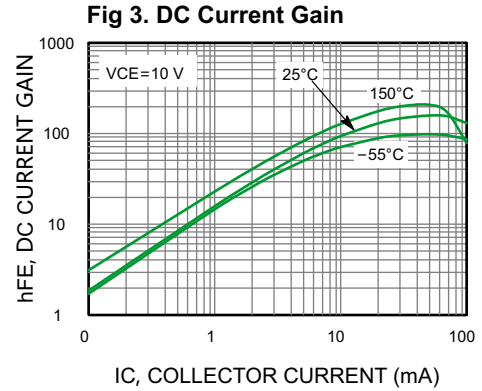
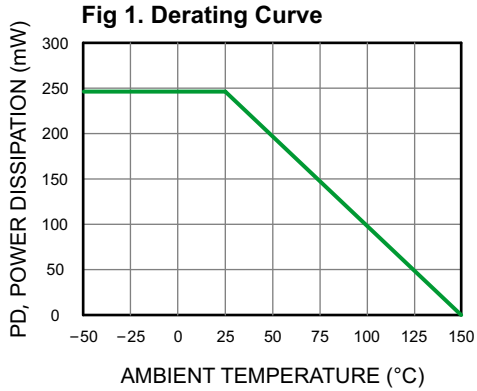


**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>						
Collector-Base Cutoff Current	$I_{CBO}$	$V_{CB}=50V, I_E=0$			100	nA
Collector-Emitter Cutoff Current	$I_{CEO}$	$V_{CE}=50V, I_B=0$			500	nA
Emitter-Base Cutoff Current	$I_{EBO}$	$V_{EB}=6.0V, I_C=0$			0.5	mA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	50			V
Collector-Emitter Breakdown Voltage	Note3 $V_{(BR)CEO}$	$I_C=2.0mA, I_B=0$	50			V
<b>ON CHARACTERISTICS</b>						
DC Current Gain	Note3 $h_{FE}$	$V_{CE}=10V, I_C=5mA$	35	60		
Collector-Emitter Saturation Voltage	Note3 $V_{CE(sat)}$	$I_C=10mA, I_B=1mA$			0.25	V
<b>ON CHARACTERISTICS</b>						
Input Voltage(off)	$V_{i(off)}$	$V_{CE}=5V, I_C=100mA$		0.9	0.3	V
Input Voltage(on)	$V_{i(on)}$	$V_{CE}=0.3V, I_C=20mA$	2.5	2		V
Output Voltage(on)	$V_{OL}$	$V_{CC}=5.0V, V_B=2.5V, R_L=1.0k$			0.2	V
Output Voltage(off)	$V_{OH}$	$V_{CC}=5.0V, V_B=0.5V, R_L=1.0k$	4.9			V
Input Resistor	$R_1$		3.3	4.7	6.1	K $\Omega$
Resistor Ratio	$R_1/R_2$		0.38	0.47	0.56	

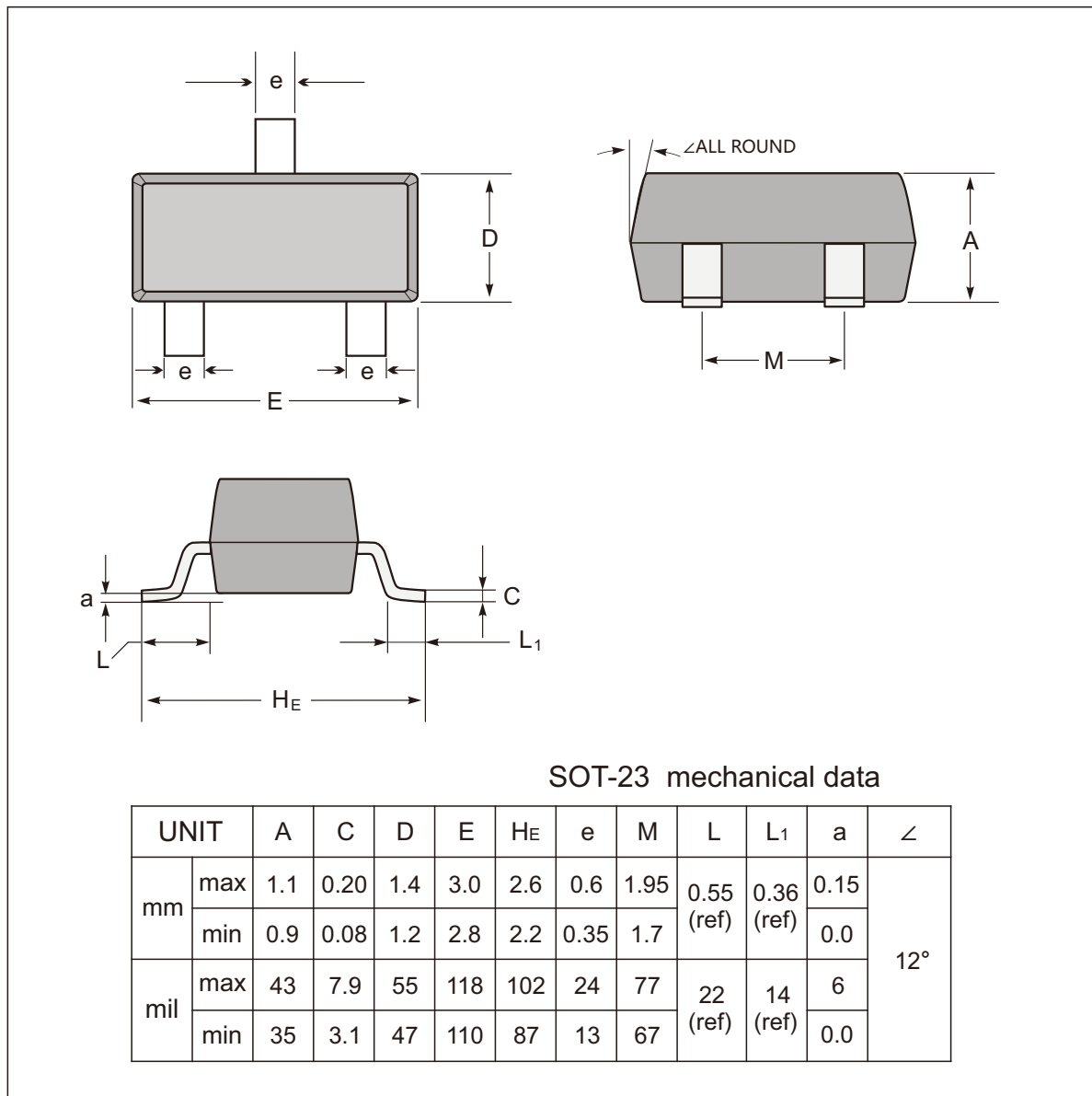


## Typical Performance Characteristics

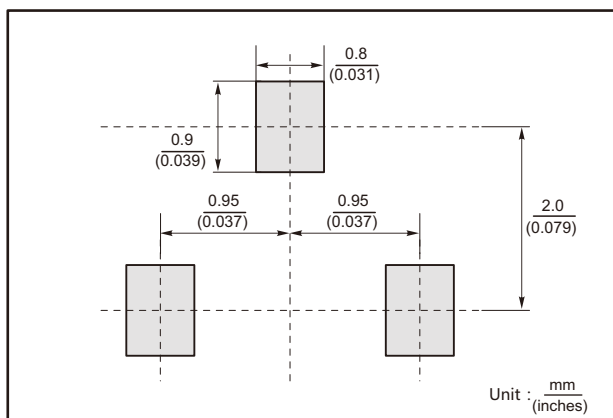




### SOT-23 Package Outline Dimensions



#### The recommended mounting pad size



#### Marking

Type number	Marking code
JDTC143XWD	43X



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