AT-JDTD143ZDC

NPN Digital Transistor

FEATURES

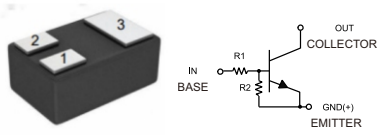
- Epitaxial Planar Die Construction
- Built-In Biasing Resistors
- Simplifies Circuit Design
- Reduces Board Space and Component Count
- Qualified to AEC-Q101 Standards for High Reliability

DEVICE RESISTOR VALUES

Type	R1(KΩ)	R2(KΩ)
JDTD143ZDC	4.7	47

PINNING

PIN	DESCRIPTION
1	BASE
2	EMITTER
3	COLLECTOR



Simplified outline DFN1006-3L and symbol

Automotive Grade

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Collector Current	I_C	100	mA
Total PowerDissipation @ T_A = 25°C (NOTE 1)	P_D	250	mW

NOTE: (1)Reflow soldering is the only recommended soldering method.
Device mounted on an FR4PCB with 70 m copper strip line, standard footprint

THERMAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Thermal Resistance – Junction-to-Ambient(Note 2)	$R_{\theta JA}$	500	°C/W
Operating and Storage Temperature Range	T_J, T_{stg}	-65 to +150	°C
Maximum Temperature for Soldering Purposes, Time in Solder Bath	T_L	260 10	°C Sec

NOTE: (2)Reflow soldering is the only recommended soldering method.
Device mounted on an FR4PCB with 70 m copper strip line, standard footprint

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector-Base CutoffCurrent	I_{CBO}	V_{CB}=50V,I_E=0			100	nA
Collector-Emitter Cut off Current	I_{CEO}	V_{CE}=50V,I_B=0			1	uA
Emitter-Base Cut off Current	I_{EBO}	V_{EB}=5.0V,I_C=0			0.17	mA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10uA,I_E=0	50			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=2.0mA,I_B=0	50			V
ON CHARACTERISTICS						
DC Current Gain	h_{FE}	VCE=10V,Ic=5mA	100			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=5mA,I_B=0.25mA			0.1	V

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
ON CHARACTERISTICS						
Input Voltage(on)	V_{IL}	V_{CE}=0.3V,I_C=5mA	1.3	0.9		V
Input Voltage(off)	V_{IH}	V_{CE}=5.0V,I_C=100μA		0.6		V
Input Resistor	R_1		3.3		6.1	kΩ
Input Resistor	R_2				58.3	kΩ
Resistor Ratio	R_2/R_1		8		12	
Collector Capacitance	C_C	V_{CB}=10V,I_E=0A,f=1Mhz			2.5	pF
Transition Frequency	f_T	V_{CE}=5V,I_C=10mA, f=100Mhz		230		Mhz

Fig 1.Transient thermal impedance from junction to ambient as a function of pulse duration for JDTD143ZDC; typical values

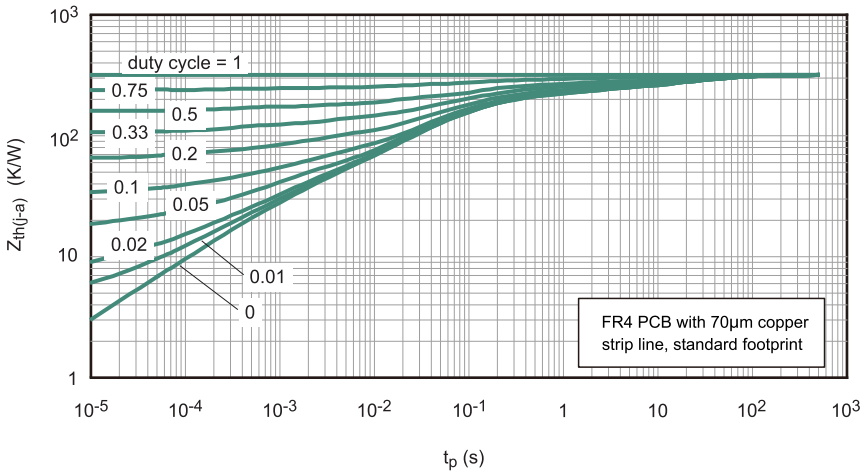


Fig 2.Power derating curves

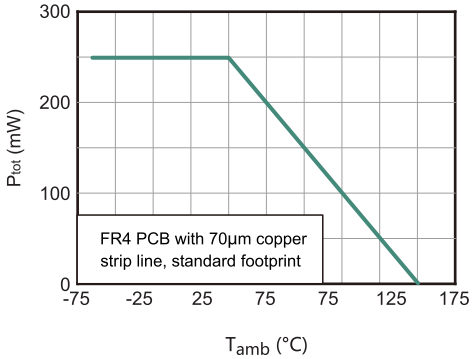


Fig 3.DC current gain as a function of collector current; typical values

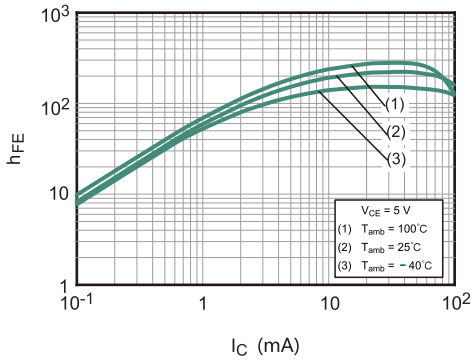


Fig 4.Collector-emitter saturation voltage as a function of collector current; typical values

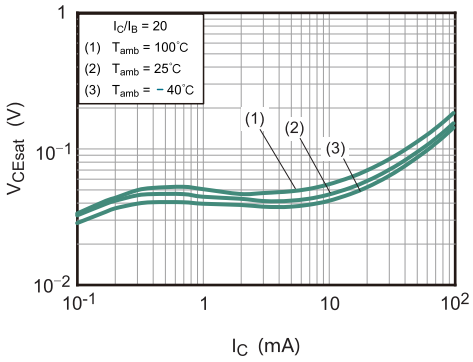


Fig 5.On-state input voltage as a function of collector current; typical values

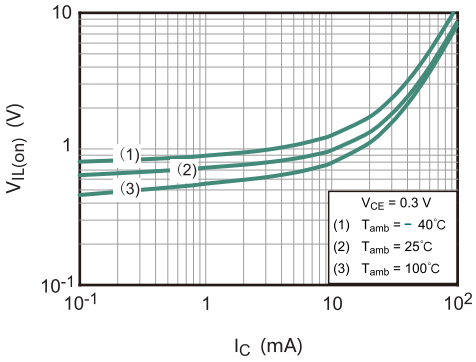


Fig 6.Off-state input voltage as a function of collector current; typical values

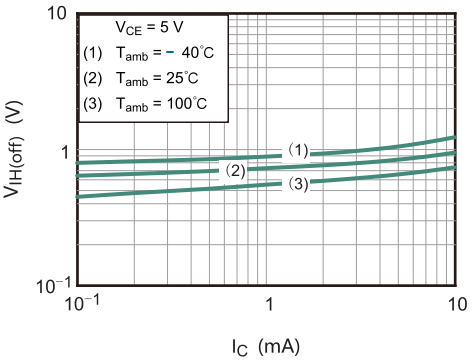
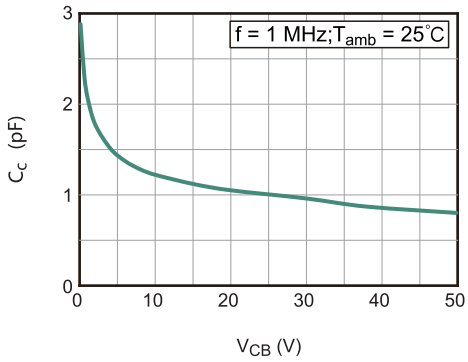
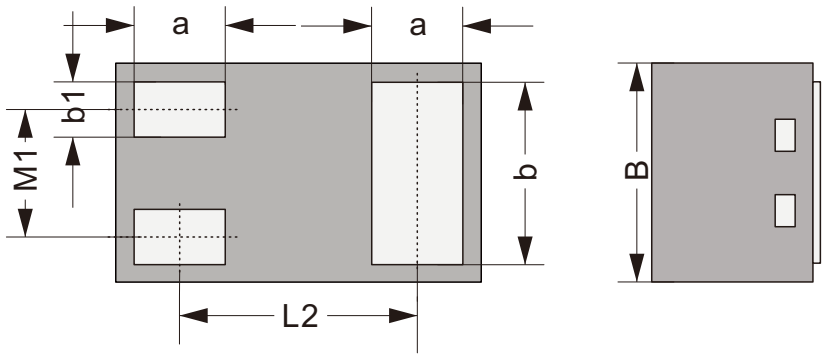
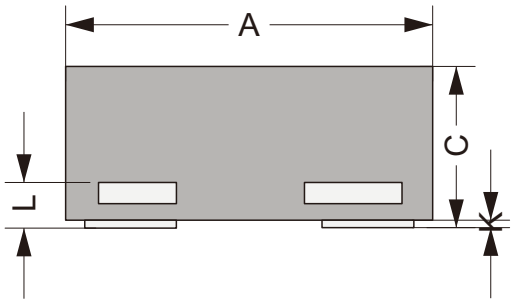


Fig 7.Collector capacitance as a function of collector-base voltage; typical values



DFN1006-3L Package Outline Dimensions





DFN1006-3L mechanical data

UNIT		A	B	C	L2	M1	L	a	b	b1	k
mm	max	1.05	0.65	0.55	0.65 REF	0.35 REF	0.152 REF	0.30	0.55	0.20	0.03
	min	0.95	0.55	0.45				0.22	0.47	0.12	
mil	max	41.34	25.59	21.65	25.59 REF	13.78 REF	5.98 REF	11.81	21.65	7.87	1.18
	min	37.40	21.65	17.72				8.66	18.50	4.72	

Marking

Type number	Marking code
JDTD143ZDC	43Z

Important Notice and Disclaimer

Jingdao Microelectronics reserves the right to make changes to this document and its products and specifications at any time without notice.
Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.

Jingdao Microelectronics makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, not does Jingdao Microelectronics assume any liability for application assistance or customer product design.

Jingdao Microelectronics does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.

No license is granted by implication or otherwise under any intellectual property rights of Jingdao Microelectronics.

Jingdao Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of Jingdao Microelectronics.