

2SD1781A

NPN Low Vce(sat) Transistor

Voltage

50V

Current

3A

Features

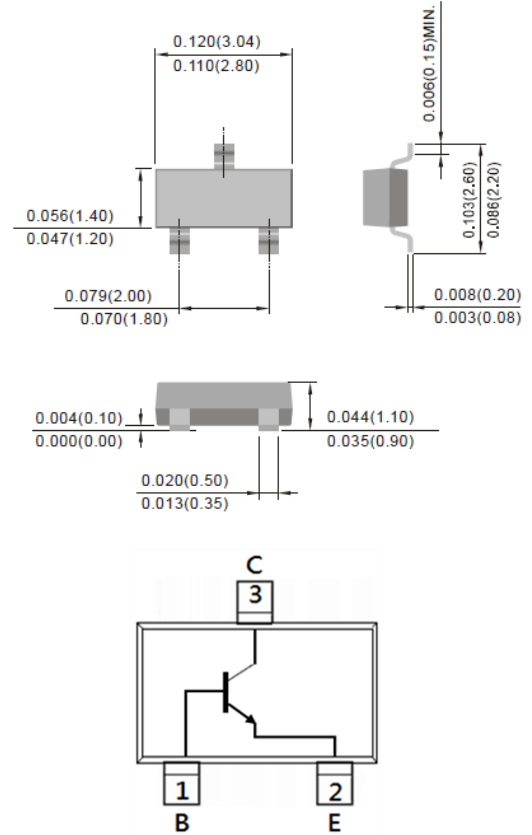
- Silicon NPN epitaxial type
- Low Vce(sat) 0.14V(max)@Ic/Ib= 1A/100mA
- High collector current capability
- Excellent DC current gain characteristics
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case: SOT-23 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounces, 0.0084 grams

SOT-23

Unit: inch(mm)



Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNIT
Collector-Base Voltage	V _{CBO}	100	V
Collector-Emitter Voltage	V _{CEO}	50	V
Emitter-Base Voltage	V _{EBO}	7	V
Collector Current (DC)	I _C	3	A
Collector Current (Pulse)	I _{CP}	5	A
Collector Power Dissipation	P _D	1.25	W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55~150	°C
Thermal Resistance from Junction to Ambient ^(Note)	R _{θJA}	100	°C/W

Note: Mounted on FR4 with 2oz. PCB at 1 inch square copper pad.

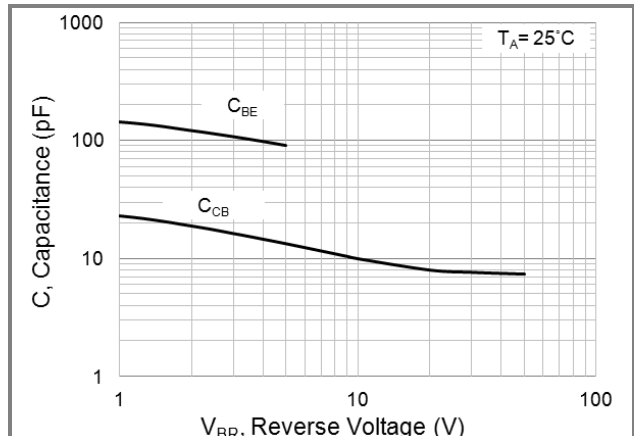
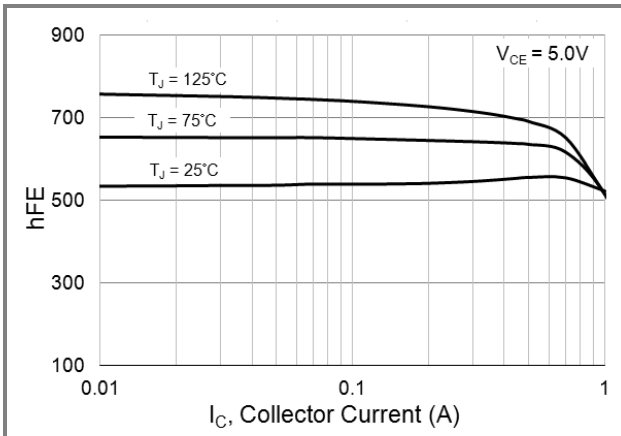
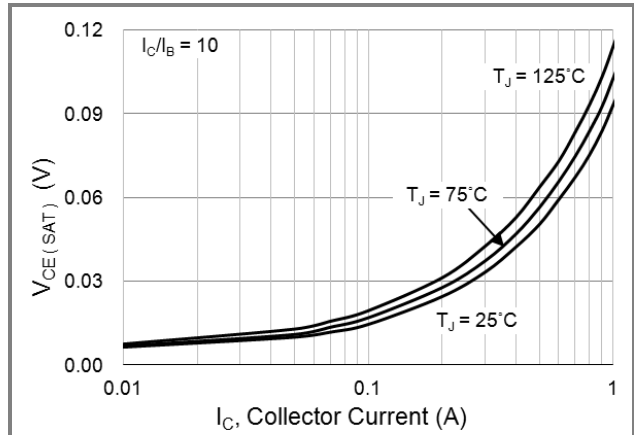
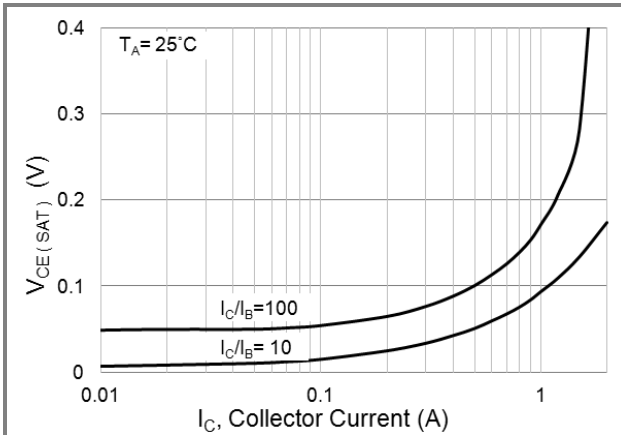
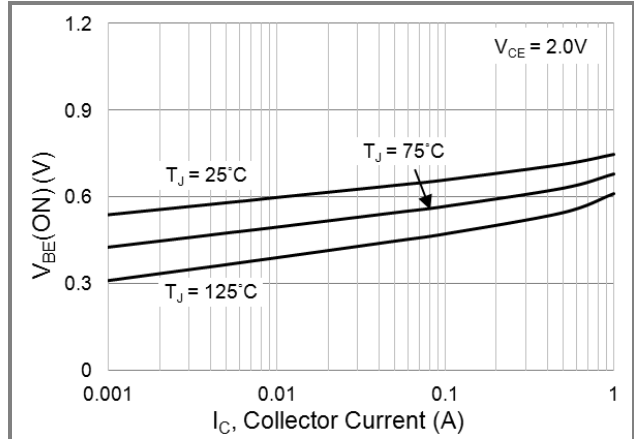
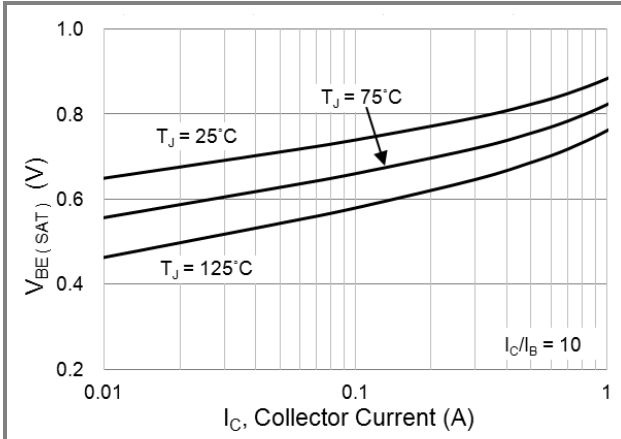
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Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
OFF Characteristics						
Collector-Emitter Breakdown Voltage	BV _{CEO}	I _C = 10mA, I _B = 0A	50	-	-	V
Collector-Base Breakdown Voltage	BV _{CBO}	I _C = 0.1mA, I _E = 0A	100	-	-	V
Emitter-Base Breakdown Voltage	BV _{EBO}	I _E = 0.1mA, I _C = 0A	7	9.4	-	V
Collector-Base Cutoff Current	I _{CBO}	V _{CB} = 30V, I _E = 0A	-	1	100	nA
Emitter-Base Cutoff Current	I _{EBO}	V _{EB} = 4V	-	1	100	nA
Collector-Emitter Cutoff Current	I _{CES}	V _{CES} = 30V	-	1	100	nA
ON characteristics						
DC Current Gain	h _{FE}	V _{CE} = 5V I _C = 50mA	300	-	-	-
		V _{CE} = 5V I _C = 0.5A	300	500	900	
		V _{CE} = 5V I _C = 1A	200	-	-	
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C = 100mA, I _B = 1mA	-	52	75	mV
		I _C = 500mA, I _B = 50mA	-	53	100	
		I _C = 1A, I _B = 100mA	-	94	140	
Base-Emitter Saturation voltage	V _{BE(SAT)}	I _C = 1A, I _B = 100mA	-	0.87	1.1	V
Base-Emitter Turn-on voltage	V _{BE(on)}	I _C = 1mA, V _{CE} = 2V	-	0.52	1.1	
Transition Frequency	f _T	I _C = 100mA, V _{CE} = 5V f=100MHz	-	250	-	MHz
Collector Output Capacitance	C _{OB}	V _{CB} = 10V I _E = 0A, f=1MHz	-	13	-	pF

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TYPICAL CHARACTERISTIC CURVES

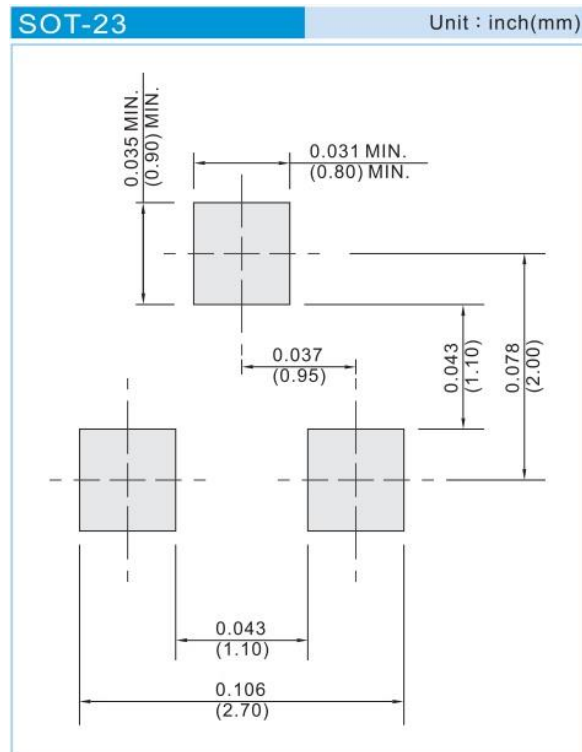


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Product and Packing Information

Part No.	Package Type	Packing Type	Marking
2SD1781A	SOT-23	3K pcs / 7" reel	D81
2SD1781A	SOT-23	12K pcs / 13" reel	D81

Mounting Pad Layout



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