

IMZ1AS

Complementary Dual General Purpose Transistor

Voltage

**50V /
-50V**

Current

**0.15 /
-0.15A**

Features

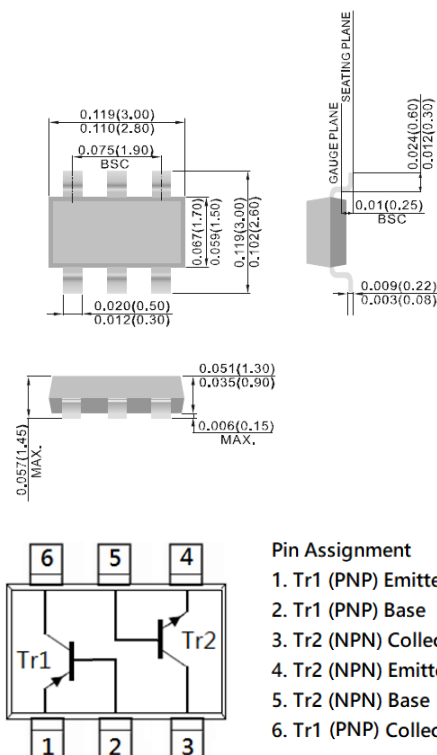
- Silicon PNP/NPN epitaxial type
- Tr1: PNP
Tr2: NPN
- Ideal for Low Power Amplification and Switching
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case: SOT-23 6L Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0005 ounces, 0.014 grams
- Marking: 1AS

SOT-23 6L

Unit: inch(mm)



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

PARAMETER	SYMBOL	Tr1	Tr2	UNITS
Collector-Base Voltage	V _{CBO}	50	-50	V
Collector-Emitter Voltage	V _{CEO}	60	-60	
Emitter-Base Voltage	V _{EBO}	7	-6	
Collector Current (DC)	I _C	150	-150	mA
Total Power Dissipation	P _D	300		mW
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55~150		°C
Typical 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 ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Tr1 (PNP)						
OFF Characteristics						
Collector-Emitter Breakdown Voltage	BV _{CEO}	I _C = -1mA, I _B = 0A	-50	-	-	V
Collector-Base Breakdown Voltage	BV _{CBO}	I _C = -50uA, I _E = 0A	-60	-	-	
Emitter-Base Breakdown Voltage	BV _{EBO}	I _E = -50uA, I _C = 0A	-6	-	-	
Collector-Base Cutoff Current	I _{CBO}	V _{CB} = -60V, I _E = 0A	-	-	-100	nA
Emitter-Base Cutoff Current	I _{EBO}	V _{EB} = -6V	-	-	-100	
ON characteristics						
DC Current Gain	h _{FE}	V _{CE} = -6V I _C = -1mA	120	-	560	-
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C = -50mA, I _B = -5mA	-	-150	-500	mV
Transition Frequency	f _T	I _E = -2mA, V _{CE} = -12V f=100MHz	-	140	-	MHz
Collector Output Capacitance	C _{OB}	V _{CB} = -12V I _E = 0A, f=100MHz	-	4	5	pF
Tr2 (NPN)						
OFF Characteristics						
Collector-Emitter Breakdown Voltage	BV _{CEO}	I _C = 1mA, I _B = 0A	50	-	-	V
Collector-Base Breakdown Voltage	BV _{CBO}	I _C = 50uA, I _E = 0A	60	-	-	
Emitter-Base Breakdown Voltage	BV _{EBO}	I _E = 50uA, I _C = 0A	7	-	-	
Collector-Base Cutoff Current	I _{CBO}	V _{CB} = 60V, I _E = 0A	-	-	100	nA
Emitter-Base Cutoff Current	I _{EBO}	V _{EB} = 7V	-	-	100	
ON characteristics						
DC Current Gain	h _{FE}	V _{CE} = 6V I _C = 1mA	120	-	560	-
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C = 50mA, I _B = 5mA	-	100	400	mV
Transition Frequency	f _T	I _E = 2mA, V _{CE} = 12V f=100MHz	-	180	-	MHz
Collector Output Capacitance	C _{OB}	V _{CB} = 12V I _E = 0A, f=100MHz	-	2	3.5	pF

Note: 1. Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$



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TYPICAL CHARACTERISTIC CURVES

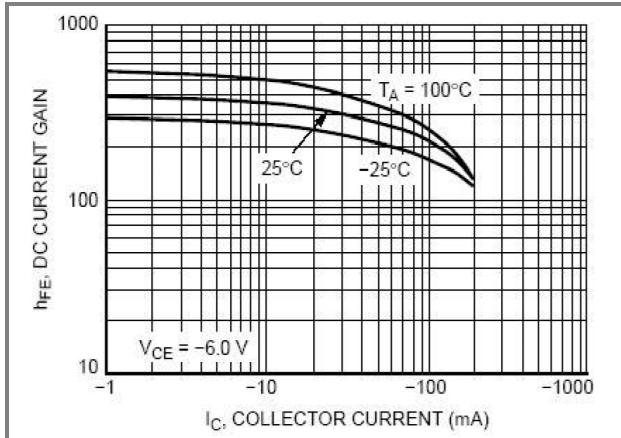


Fig.1 DC Current Gain

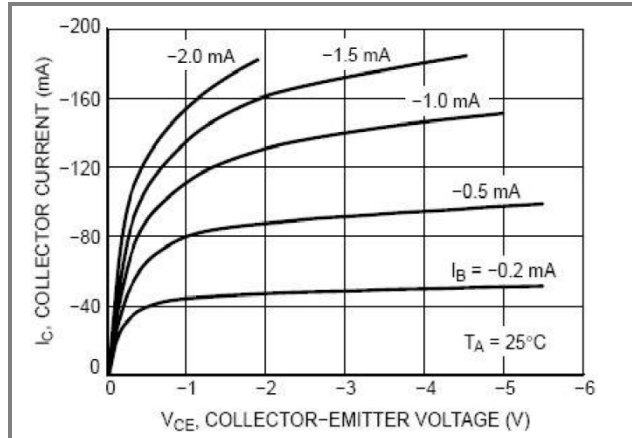


Fig.2 Collector Current

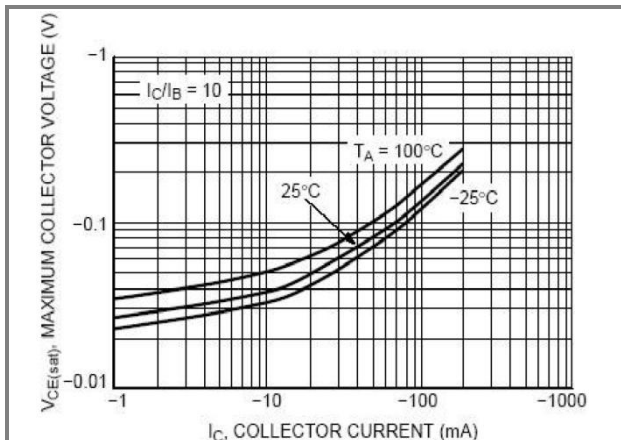


Fig.3 Collector-Emitter Saturation Voltage

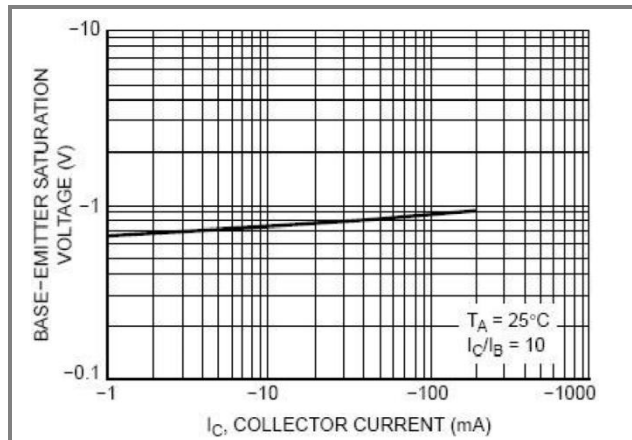


Fig.4 Base-Emitter Saturation Voltage

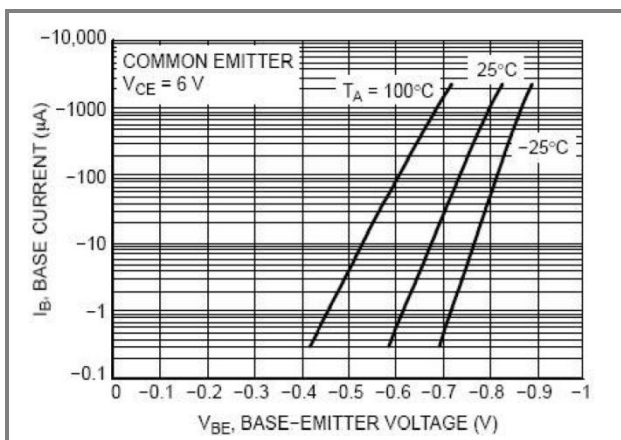
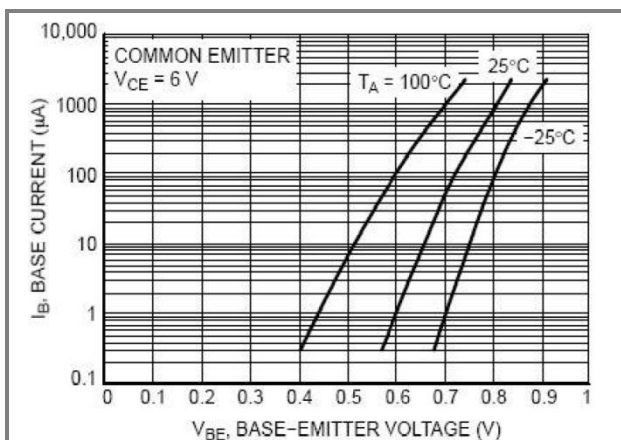
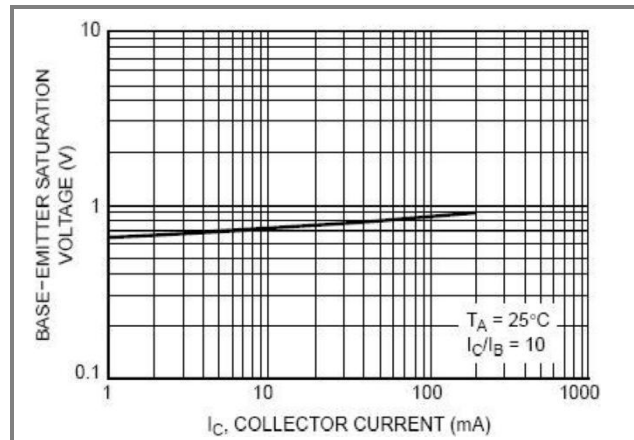
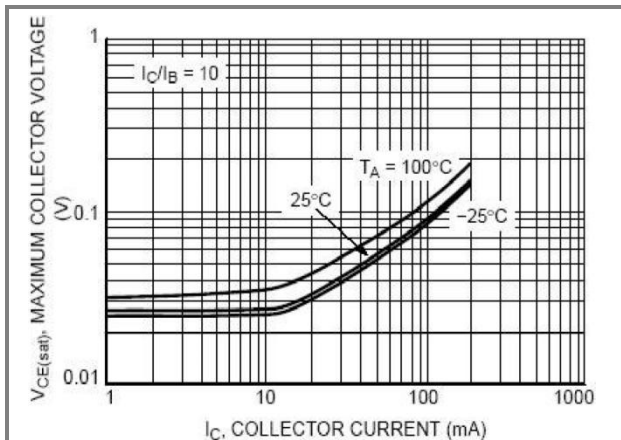
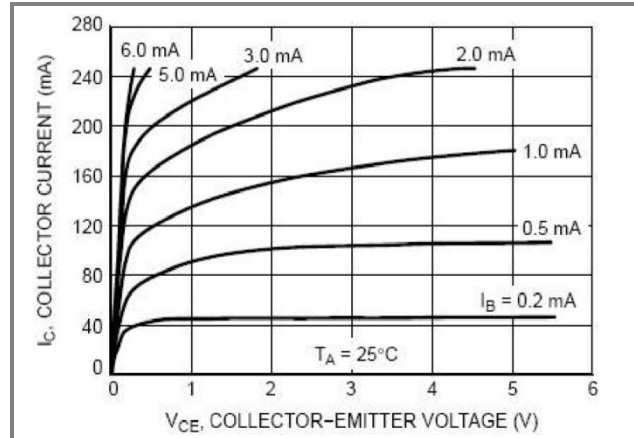
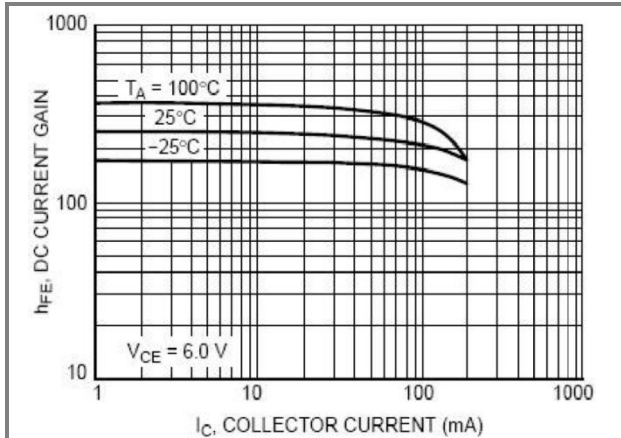


Fig.5 Base-Emitter Voltage



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TYPICAL CHARACTERISTIC CURVES



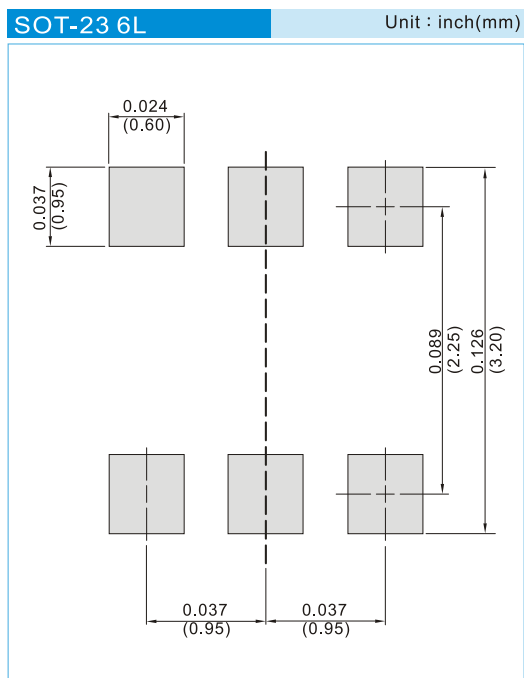
Tr2 (NPN)

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Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
IMZ1AS_S1_00001	SOT-23 6L	3K pcs / 7" reel	1AS	Halogen free

Mounting Pad Layout





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