IMZ1AS-AU

Complementary Dual General Purpose Transistor

Voltage	50V / -50V	Current	0.15 / -0.15A

Features

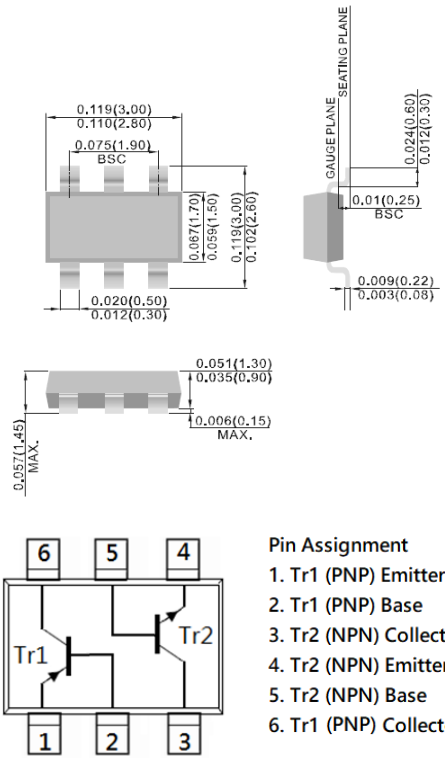
- Silicon PNP/NPN epitaxial type
- Tr1: PNP

  Tr2: NPN
- Ideal for Low Power Amplification and Switching
- AEC-Q101 qualified
- 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)**



Pin Assignment
1. Tr1 (PNP) Emitter
2. Tr1 (PNP) Base
3. Tr2 (NPN) Collector
4. Tr2 (NPN) Emitter
5. Tr2 (NPN) Base
6. Tr1 (PNP) Collector

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)	$R_{\theta JA}$	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.	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≤300us, Duty cycle≤2%

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TYPICAL CHARACTERISTIC CURVES

Tr1 (PNP)

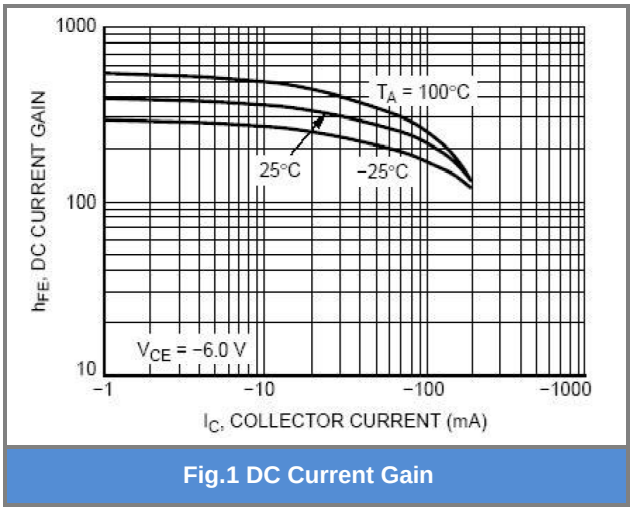

Fig.1 DC Current Gain

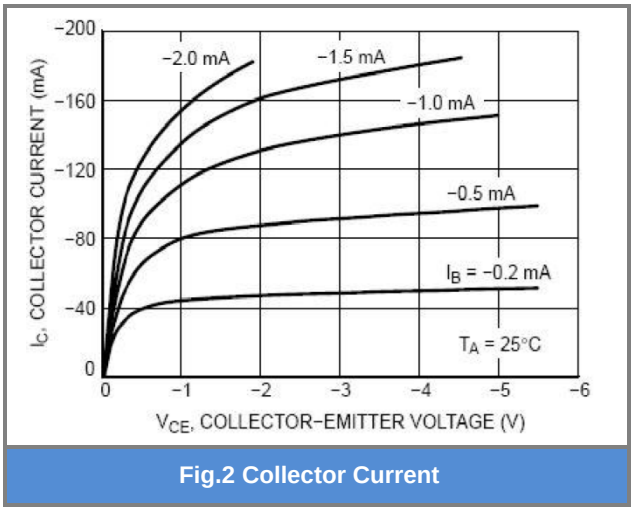

Fig.2 Collector Current

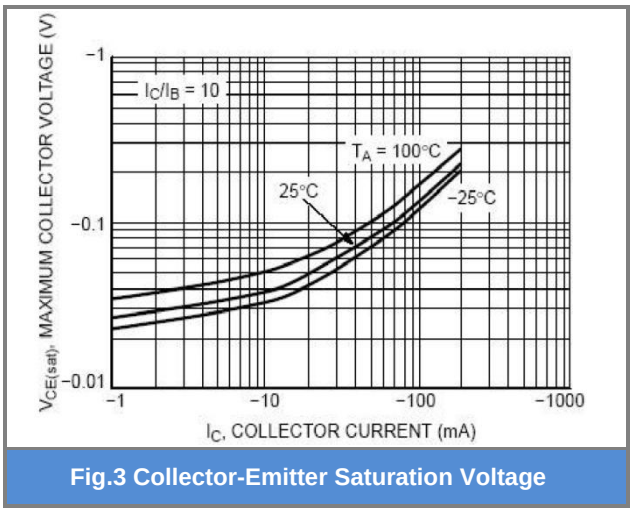

Fig.3 Collector-Emitter Saturation Voltage

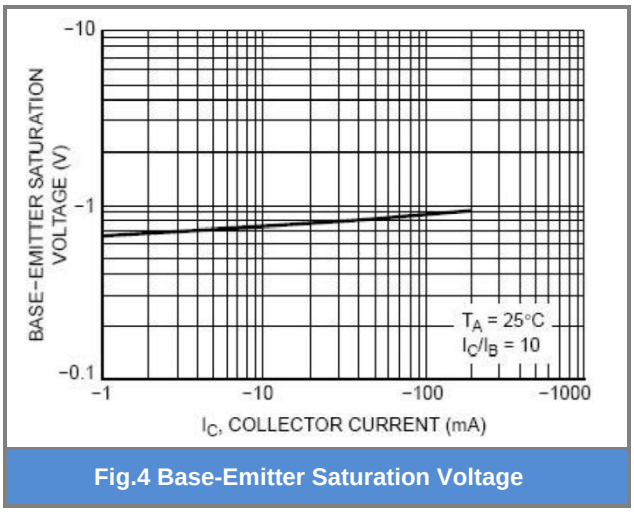

Fig.4 Base-Emitter Saturation Voltage

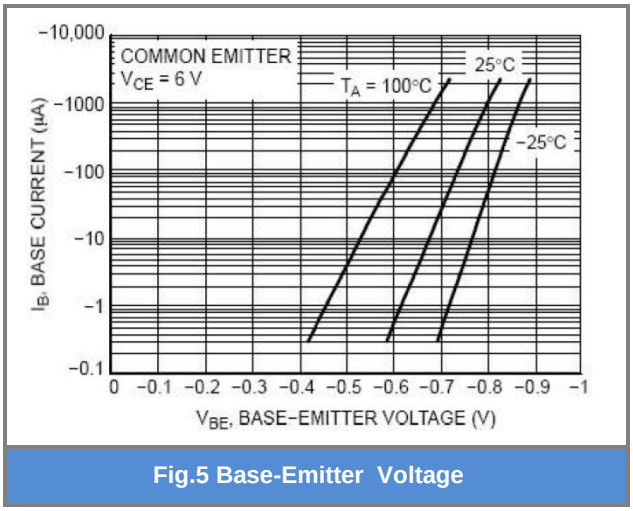

Fig.5 Base-Emitter Voltage

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TYPICAL CHARACTERISTIC CURVES

Tr2 (NPN)

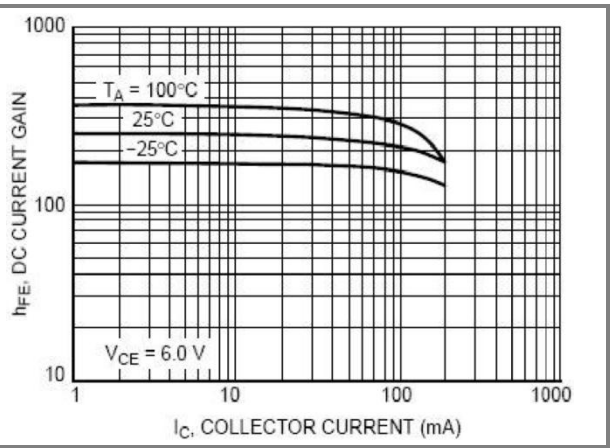

Fig.6 DC Current Gain

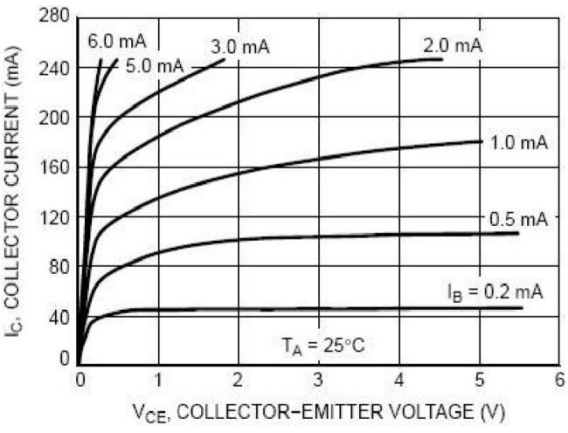

Fig.7 Collector Current

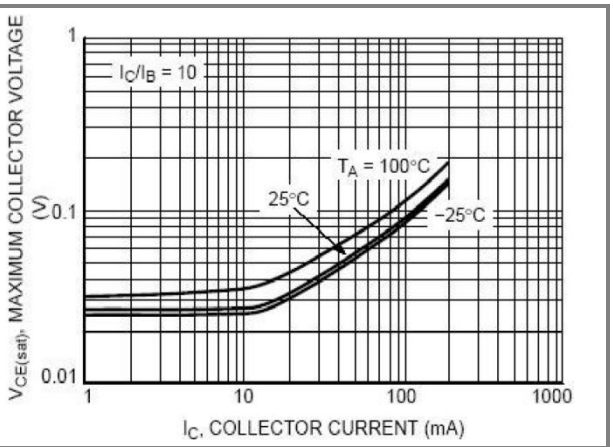

Fig.8 Collector-Emitter Saturation Voltage

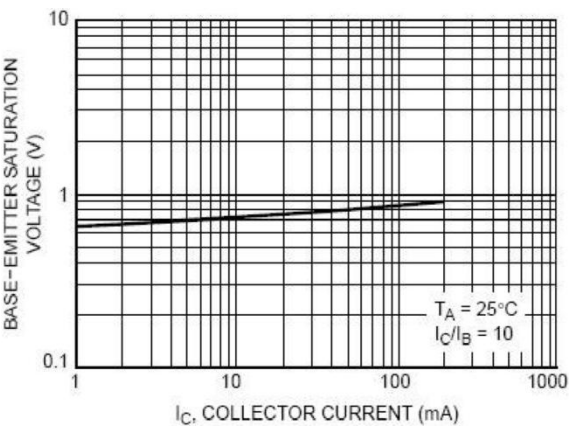

Fig.9 Base-Emitter Saturation Voltage

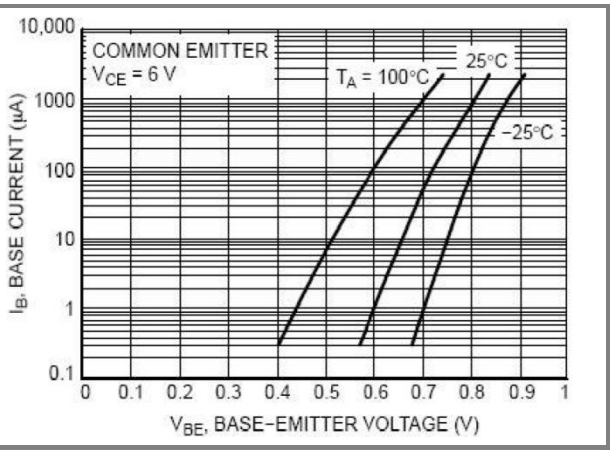

Fig.10 Base-Emitter Voltage

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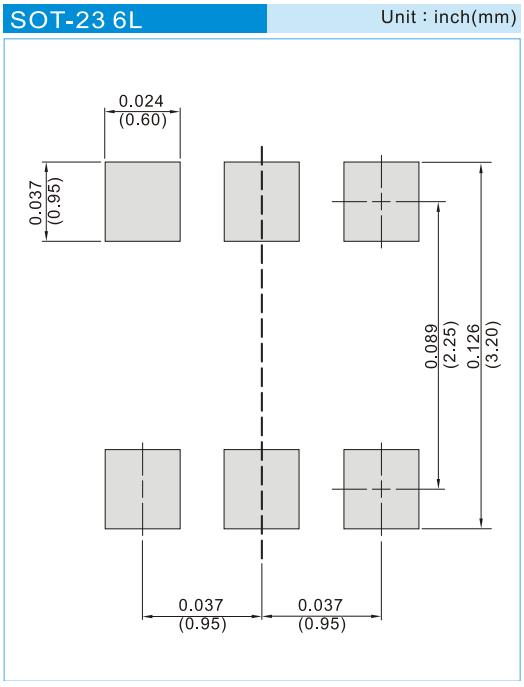
Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
IMZ1AS-AU_S1_000A1	SOT-23 6L	3K pcs / 7” reel	1AS	Halogen free

Mounting Pad Layout



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