



IMZ1AS

Complementary Dual General Purpose Transistor

Voltage

50V /
-50V

Current

0.15 /
-0.15A

Features

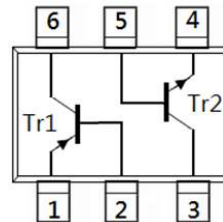
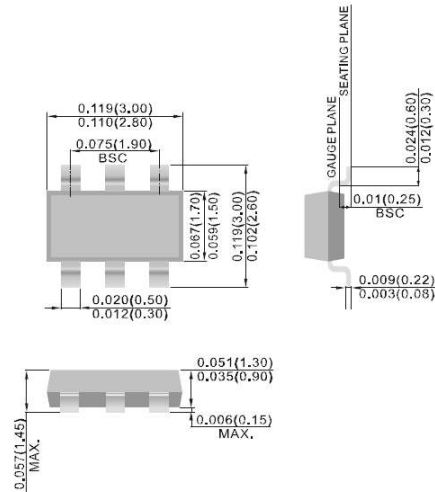
- Silicon PNP/NPN epitaxial type
- Tr1: PNP
Tr2: NPN
- Ideal for Low Power Amplification and Switching
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

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)



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 _{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}	$I_C = -1\text{mA}, I_B = 0\text{A}$	-50	-	-	V
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = -50\mu\text{A}, I_E = 0\text{A}$	-60	-	-	
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = -50\mu\text{A}, I_C = 0\text{A}$	-6	-	-	
Collector-Base Cutoff Current	I_{CBO}	$V_{CB} = -60\text{V}, I_E = 0\text{A}$	-	-	-100	nA
Emitter-Base Cutoff Current	I_{EBO}	$V_{EB} = -6\text{V}$	-	-	-100	
ON characteristics						
DC Current Gain	h_{FE}	$V_{CE} = -6\text{V}, I_C = -1\text{mA}$	120	-	560	-
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = -50\text{mA}, I_B = -5\text{mA}$	-	-150	-500	mV
Transition Frequency	f_T	$I_E = -2\text{mA}, V_{CE} = -12\text{V}$ $f = 100\text{MHz}$	-	140	-	MHz
Collector Output Capacitance	C_{OB}	$V_{CB} = -12\text{V}, I_E = 0\text{A}$, $f = 100\text{MHz}$	-	4	5	pF
Tr2 (NPN)						
OFF Characteristics						
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = 1\text{mA}, I_B = 0\text{A}$	50	-	-	V
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = 50\mu\text{A}, I_E = 0\text{A}$	60	-	-	
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = 50\mu\text{A}, I_C = 0\text{A}$	7	-	-	
Collector-Base Cutoff Current	I_{CBO}	$V_{CB} = 60\text{V}, I_E = 0\text{A}$	-	-	100	nA
Emitter-Base Cutoff Current	I_{EBO}	$V_{EB} = 7\text{V}$	-	-	100	
ON characteristics						
DC Current Gain	h_{FE}	$V_{CE} = 6\text{V}, I_C = 1\text{mA}$	120	-	560	-
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = 50\text{mA}, I_B = 5\text{mA}$	-	100	400	mV
Transition Frequency	f_T	$I_E = 2\text{mA}, V_{CE} = 12\text{V}$ $f = 100\text{MHz}$	-	180	-	MHz
Collector Output Capacitance	C_{OB}	$V_{CB} = 12\text{V}, I_E = 0\text{A}$, $f = 100\text{MHz}$	-	2	3.5	pF

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



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TYPICAL CHARACTERISTIC CURVES

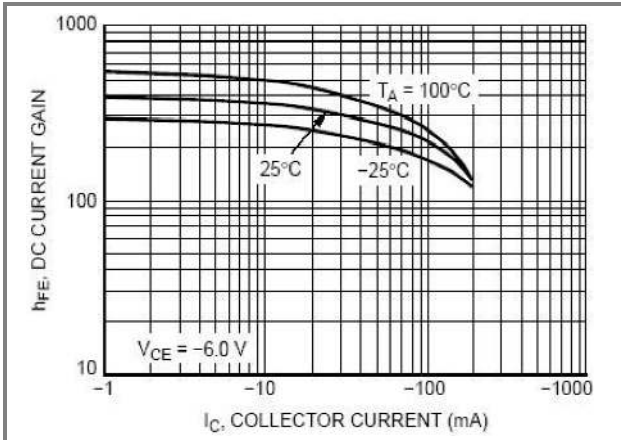


Fig.1 DC Current Gain

Tr1 (PNP)

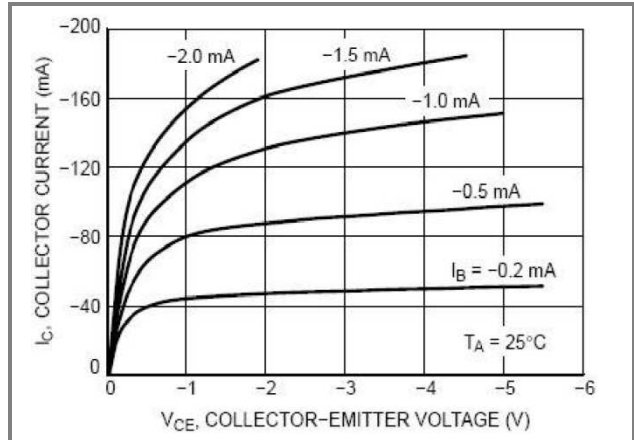


Fig.2 Collector Current

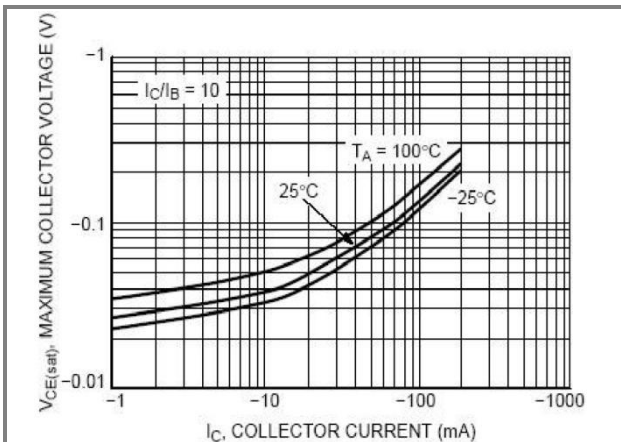


Fig.3 Collector-Emitter Saturation Voltage

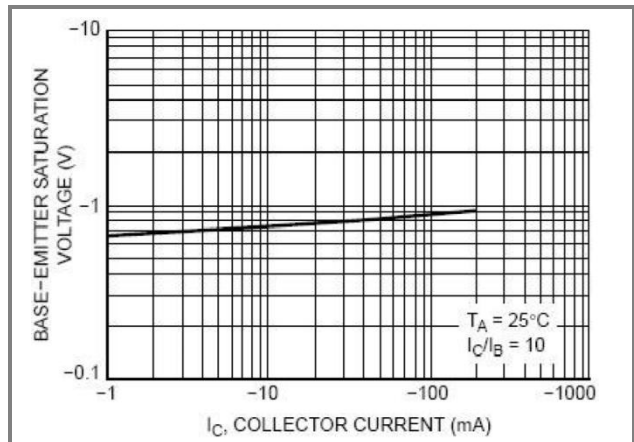


Fig.4 Base-Emitter Saturation Voltage

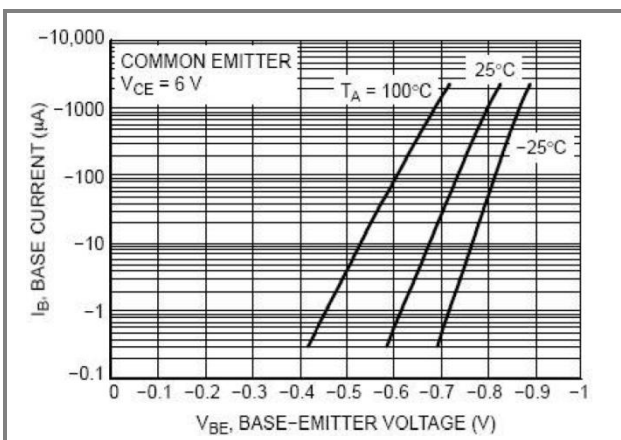


Fig.5 Base-Emitter Voltage



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TYPICAL CHARACTERISTIC CURVES

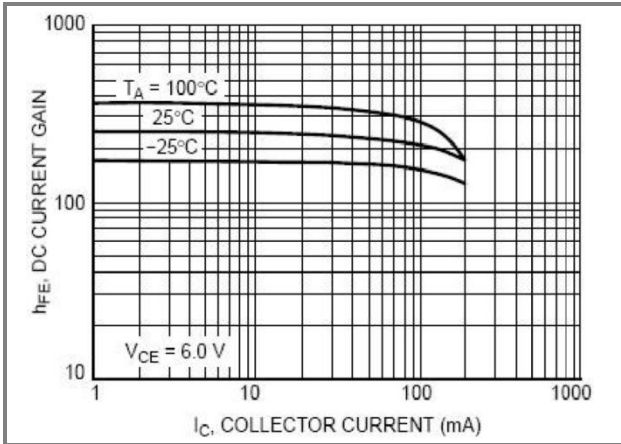


Fig.6 DC Current Gain

Tr2 (NPN)

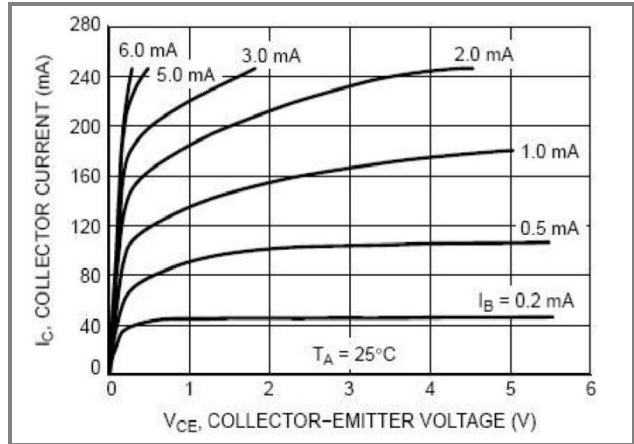


Fig.7 Collector Current

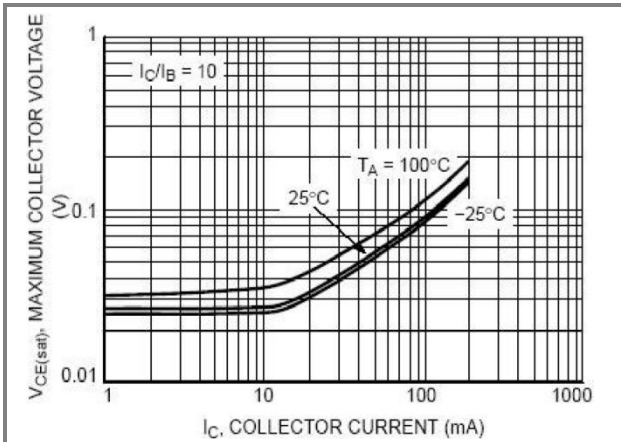


Fig.8 Collector-Emitter Saturation Voltage

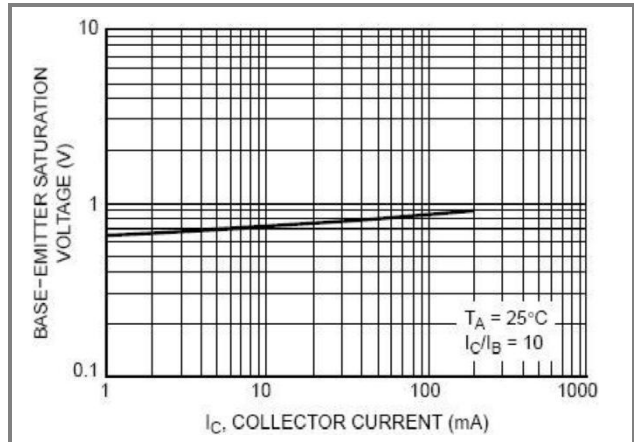


Fig.9 Base-Emitter Saturation Voltage

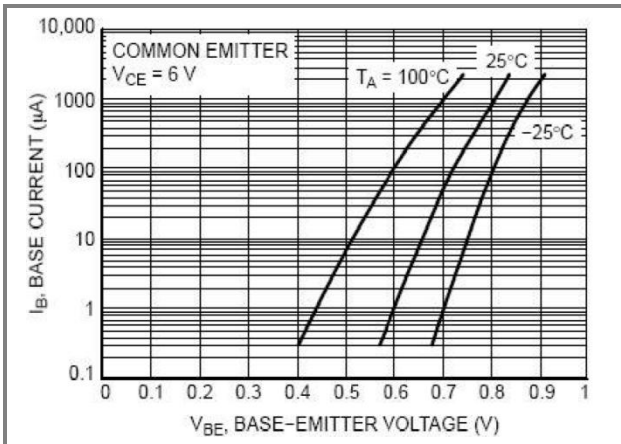


Fig.10 Base-Emitter Voltage

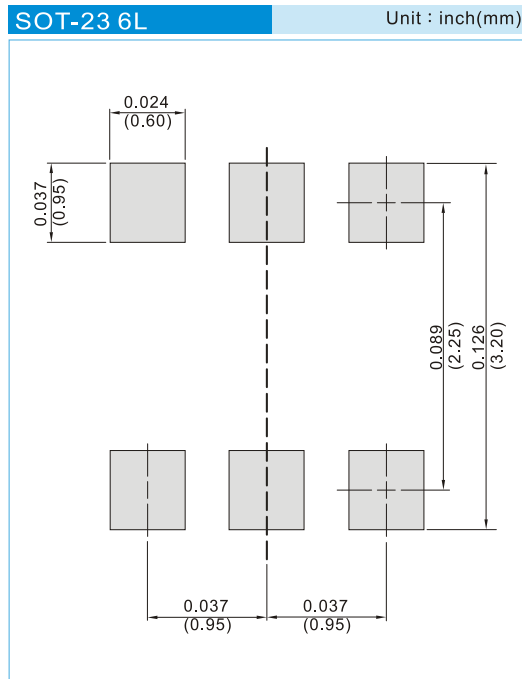


IMZ1AS

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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