



# IMZ1AS

## Complementary Dual General Purpose Transistor

**Voltage**

**50V /  
-50V**

**Current**

**0.15 /  
-0.15A**

### Features

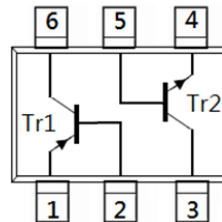
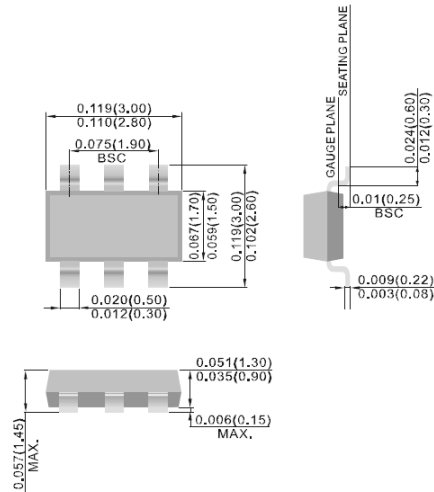
- Silicon PNP/NPN epitaxial type
- Tr1: PNP  
Tr2: NPN
- Ideal for Low Power Amplification and Switching
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### 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<sub>A</sub>=25 °C unless otherwise noted)

PARAMETER	SYMBOL	Tr1	Tr2	UNITS
Collector-Base Voltage	V <sub>CBO</sub>	50	-50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	60	-60	
Emitter-Base Voltage	V <sub>EBO</sub>	7	-6	
Collector Current (DC)	I <sub>C</sub>	150	-150	mA
Total Power Dissipation	P <sub>D</sub>	300		mW
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55~150		°C
Typical Thermal Resistance from Junction to Ambient <sup>(Note)</sup>	R <sub>θJA</sub>	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)

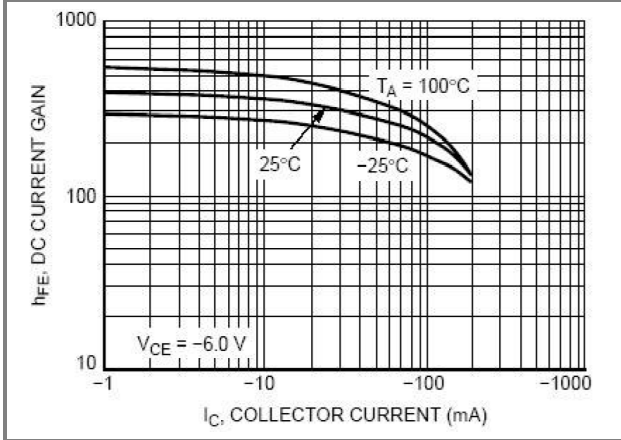
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
<b>Tr1 (PNP)</b>						
<b>OFF Characteristics</b>						
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = -1\text{mA}, I_B = 0\text{A}$	-50	-	-	V
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C = -50\mu\text{A}, I_E = 0\text{A}$	-60	-	-	
Emitter-Base 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	
<b>ON characteristics</b>						
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
<b>Tr2 (NPN)</b>						
<b>OFF Characteristics</b>						
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	
<b>ON characteristics</b>						
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  $\leq 2\%$

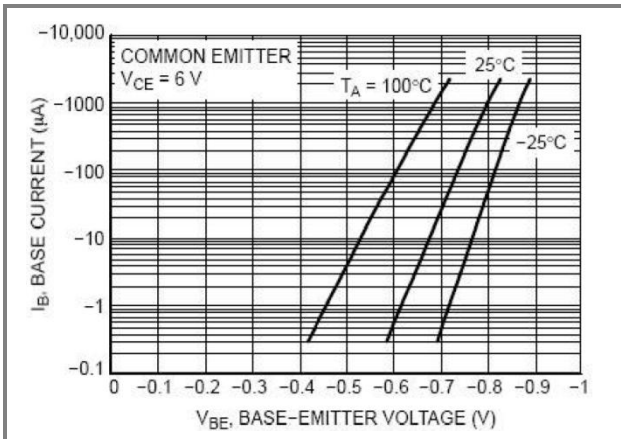
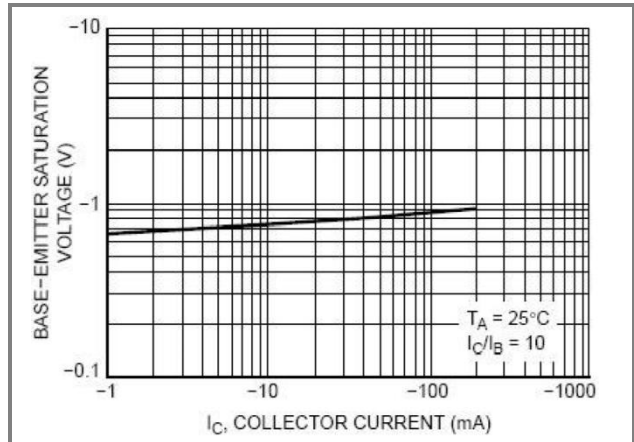
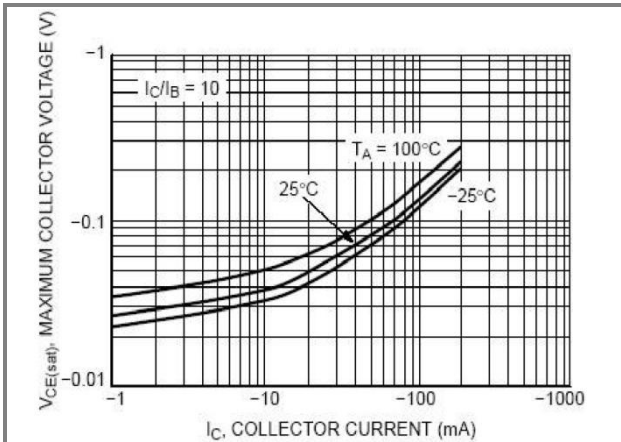
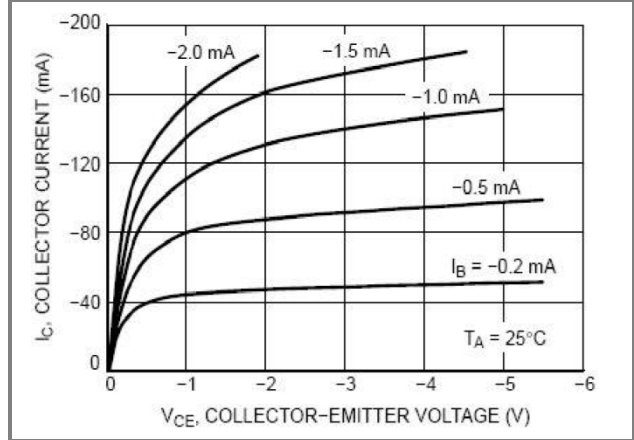


# IMZ1AS

## TYPICAL CHARACTERISTIC CURVES



## Tr1 (PNP)





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## TYPICAL CHARACTERISTIC CURVES

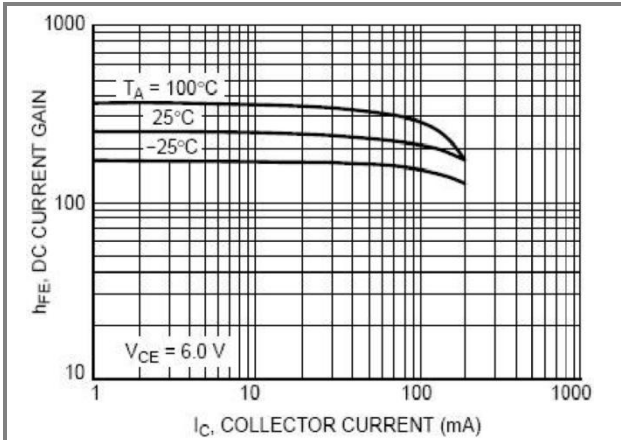


Fig.6 DC Current Gain

## Tr2 (NPN)

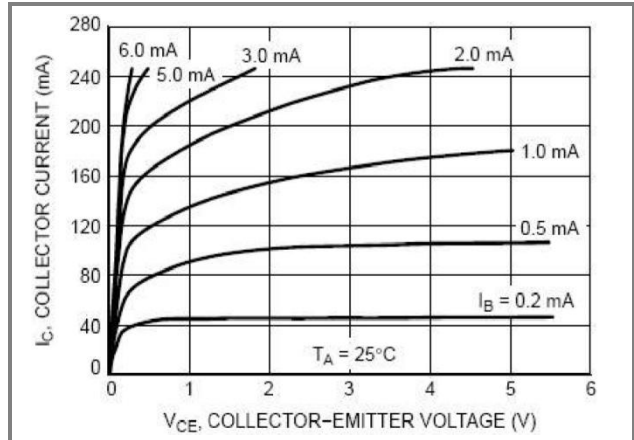


Fig.7 Collector Current

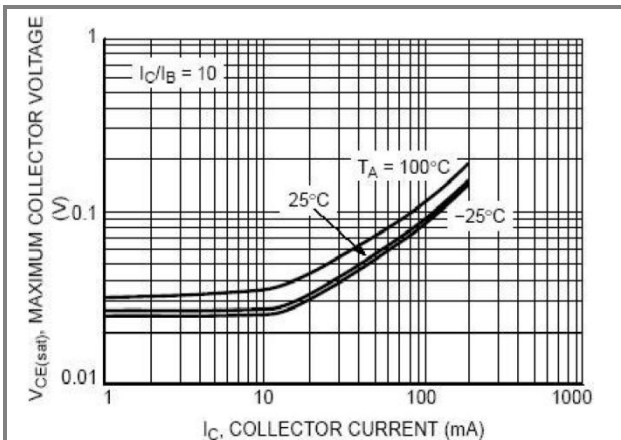


Fig.8 Collector-Emitter Saturation Voltage

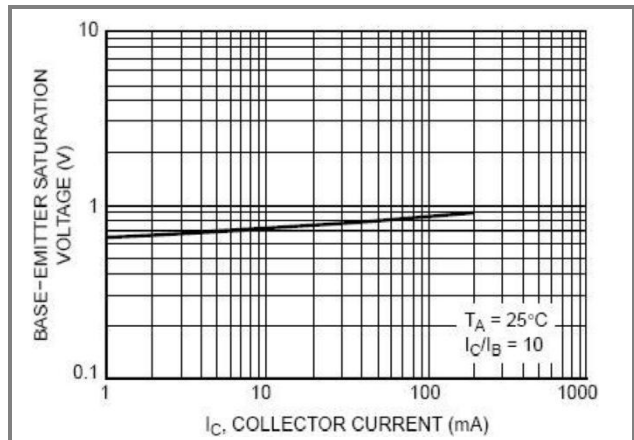


Fig.9 Base-Emitter Saturation Voltage

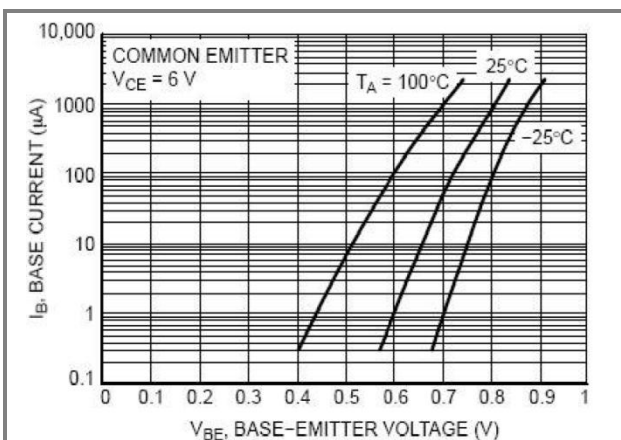


Fig.10 Base-Emitter Voltage

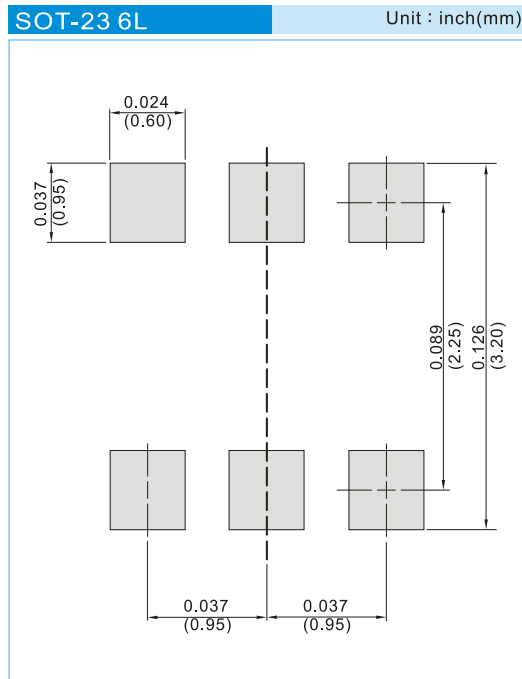


# IMZ1AS

## 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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