General purpose (dual digital transistors)

EMD2 / UMD2N / IMD2A

Features

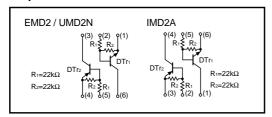
- 1) Both the DTA124E chip and DTC124E chip in a EMT or UMT or SMT package.
- 2) Mounting possible with EMT6 or UMT6 or SMT6 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.
- 4) Mounting cost and area can be cut in half.

Structure

Epitaxial planar type NPN / PNP silicon transistor (Built-in resistor type)

The following characteristics apply to both the DTr1 and DTr2, however, the "-" sign on DTr2 values for the PNP type have been omitted.

●Equivalent circuit



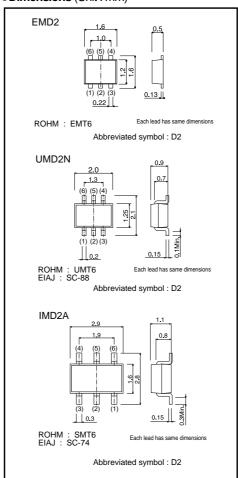
● Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit	
Supply voltage		Vcc	50	V	
Input voltage		Vin	40	V	
		VIN	-10		
Output current		lo	30	mA	
		Ic (Max.)	100		
Power dissipation	EMD2, UMD2N	Pd	150 (TOTAL)	*1 mW *2	
	IMD2A	Pa	300 (TOTAL)		
Junction temperature		Tj	150	°C	
Storage temperature		Tstg	-55 to +150	°C	

^{*1 120}mW per element must not be exceeded

*2 200mW per element must not be exceeded.

●Dimensions (Unit: mm)



●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions	
Input voltage	V _{I (off)}	-	_	0.5	V	Vcc=5V, Io=100μA	
input voltage	VI (on)	3	_	_	V	Vo=0.2V, Io=5mA	
Output voltage	Vo (on)	-	0.1	0.3	V	Io=10mA, I:=0.5mA	
Input current	lı	-	_	0.36	mA	V _I =5V	
Output current	lo (off)	-	_	0.5	μΑ	Vcc=50V, Vi=0V	
DC current gain	Gı	56	-	_	_	Vo=5V, Io=5mA	
Transition frequency	f⊤	_	250	_	MHz	Vc=10V, I=-5mA, f=100MHz *	
Input resistance	R ₁	15.4	22	28.6	kΩ	-	
Resistance ratio	R ₂ /R ₁	0.8	1	1.2	_	-	

^{*} Transition frequency of the device

Packaging specifications

Туре	Package	Taping				
	Code	T2R	TR	T108		
	Basic ordering unit (pieces)	8000	3000	3000		
EMD2		0	_			
UMD2N		_	0	_		
IMD2A		_	_	0		

●Electrical characteristic curves

DTr₁ (NPN)

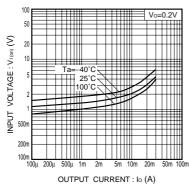


Fig.1 Input voltage vs. output current (ON characteristics)

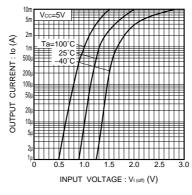


Fig.2 Output current vs. input voltage (OFF characteristics)

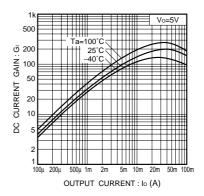


Fig.3 DC current gain vs. output

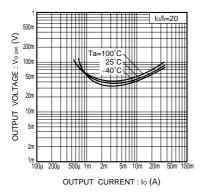


Fig.4 Output voltage vs. output current

DTr₂ (PNP)

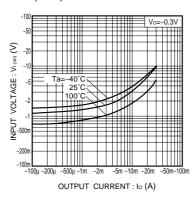


Fig.5 Input voltage vs. output current (ON characteristics)

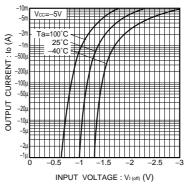


Fig.6 Output current vs. input voltage (OFF characteristics)

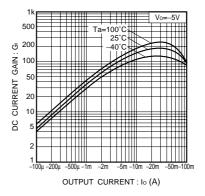


Fig.7 DC current gain vs. output current

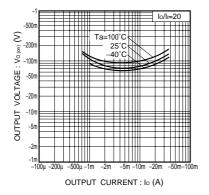


Fig.8 Output voltage vs. output current

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