

# General purpose (dual digital transistors)

### EMD22 / UMD22N

#### Features

- 1) Both the DTA143Z chip and DTC143Z chip in an EMT or UMT package.
- 2) Mounting possible with EMT3 or UMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.
- 4) Mounting cost and area can be cut in half.

#### **●Structure**

A PNP and NPN digital transistor (Each with a single built in resistor)

Packaging specifications

Type	Package	Taping		
	Code	T2R	TR	
. )   0	Basic ordering unit (pieces)	8000	3000	
EMD22		0	_	
UMD22N	J	_	0	

# ●Absolute maximum ratings (Ta=25°C)

DTr 1

2				
Parameter	Symbol	Limits	Unit	
Supply voltage	Vcc	50	V	
Input voltage	Vin	-5 to +30	V	
Output aurent	lo	100	A	
Output current	Ic (MAX)	100	mA	
Power dissipation	Pd *	150	mW	
Junction temperature	Tj	150	°C	
Storage temperature	Tstg	-55 to +150	°C	

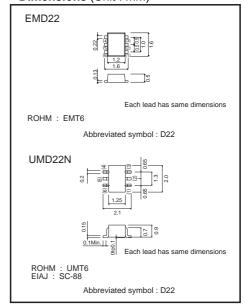
<sup>\*120</sup>mW per element must not be exceeded

#### DTr 2

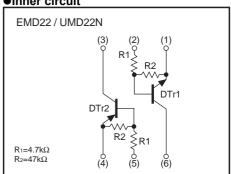
Parameter	Symbol	Limits	Unit		
Supply voltage	Vcc	-50	V		
Input voltage	VIN	-30 to +5	V		
Output aurent	lo	-100	mA		
Output current	Ic (MAX)	-100			
Power dissipation *	Pd	150	mW		
Junction temperature	Tj	150	°C		
Storage temperature	Tstg	−55 to +150	°C		

<sup>\*120</sup>mW per element must not be exceeded

#### ●Dimensions (Unit : mm)



#### •Inner circuit



EMD22 / UMD22N Data Sheet

# ●Electrical characteristics (Ta=25°C)

DTr '

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Input voltage	VI (off)	_	_	0.5	V	Vcc=5V, Io=100μA
Input voltage	VI (on)	1.3	_	_		Vo=0.3V, Io=5mA
Output voltage	Vo (on)	_	0.1	0.3	V	lo/l=5mA/0.25mA
Input current	lı	_	_	1.8	mA	Vi=5V
Output current	lo (off)	_	_	0.5	μΑ	Vcc=50V, Vı=0V
DC current gain	Gı	80	_	_	_	Vo=5V, Io=10mA
Input resistance	R <sub>1</sub>	3.29	4.7	6.11	kΩ	-
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>	8	10	12	_	-
Transition frequency	f⊤ *	_	250	_	MHz	Vce=10V, Ie=-5mA, f=100MHz

<sup>\*</sup>Transition frequency of the device

DTr 2

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Input voltage	VI (off)	_	_	-0.5	V	Vcc=-5V, Io=-100μA
Input voltage	VI (on)	-1.3	_	_		Vo=-0.3V, Io=-5mA
Output voltage	Vo (on)	_	-0.1	-0.3	V	lo/l:=-5mA/-0.25mA
Input current	lı	_	_	-1.8	mA	VI=-5V
Output current	lo (off)	_	_	-0.5	μΑ	Vcc=-50V, VI=0V
DC current gain	Gı	80	_	_	_	Vo=-5V, Io=-10mA
Input resistance	R <sub>1</sub>	3.29	4.7	6.11	kΩ	-
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>	8	10	12	_	-
Transition frequency	f⊤ *	_	250	_	MHz	Vce=-10V, Ie=5mA, f=100MHz

<sup>\*</sup>Transition frequency of the device

EMD22 / UMD22N Data Sheet

#### •Electrical characteristic curves

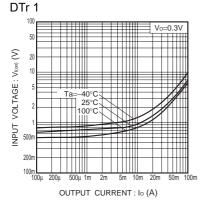


Fig.1 Input voltage vs. output current (ON characteristics)

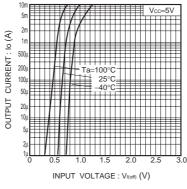


Fig.2 Output current vs. input voltage (OFF characteristics)

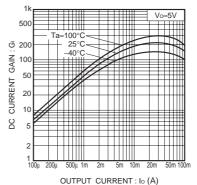


Fig.3 DC current gain vs. output current

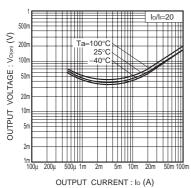


Fig.4 Output voltage vs. output current

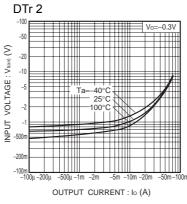


Fig.5 Input voltage vs. output current (ON characteristics)

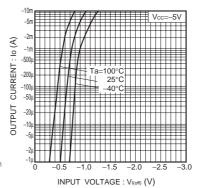


Fig.6 Output current vs. input voltage (OFF characteristics)

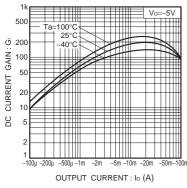


Fig.7 DC current gain vs. output current

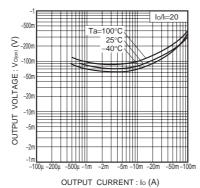


Fig.8 Output voltage vs. output current

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