General purpose (dual digital transistors)

EMB11 / UMB11N / IMB11A

●Features

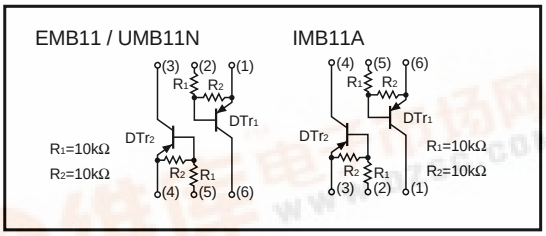
1) Two DTA114E chips in a EMT or UMT or SMT package.
2) Mounting possible with EMT3 or UMT3 or SMT3 automatic mounting machines.
3) Transistor elements are independent, eliminating interference.
4) Mounting cost and area can be cut in half.

●Structure

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

The following characteristics apply to both DTr_1 and DTr_2.

●Equivalent circuit



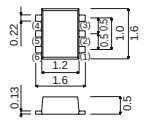
●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Supply voltage		V_{CC}	−50	V
Input voltage		V_{IN}	−40	V
			10	
Output current		I_O	−50	mA
		$I_{C\ (Max.)}$	−100	
Power dissipation	EMB11, UMB11N	Pd	150 (TOTAL)	mW ∗1
	IMB11A		300 (TOTAL)	∗2
Junction temperature		Tj	150	˚C
Storage temperature		Tstg	−55 to +150	˚C

∗1 120mW per element must not be exceeded.
∗2 200mW per element must not be exceeded.

●External dimensions (Unit : mm)

EMB11

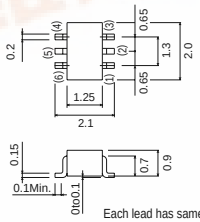


Each lead has same dimensions

ROHM : EMT6

Abbreviated symbol : B11

UMB11N

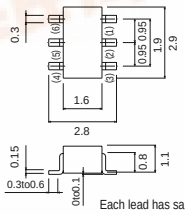


Each lead has same dimensions

ROHM : UMT6
EIAJ : SC-88

Abbreviated symbol : B11

IMB11A



Each lead has same dimensions

ROHM : SMT6
EIAJ : SC-74

Abbreviated symbol : B11

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	$V_{I\,(off)}$	–	–	–0.5	V	V_{CC}= –5V, I_O= –100μA
	$V_{I\,(on)}$	–3.0	–	–		V_O= –0.3V, I_O= –10mA
Output voltage	$V_{O\,(on)}$	–	–0.1	–0.3	V	I_O/I_I= –10mA/ –0.5mA
Input current	I_I	–	–	–0.88	mA	V_I= –5V
Output current	$I_{O\,(off)}$	–	–	–0.5	μA	V_{CC}= –50V, V_I=0V
DC current gain	G_I	30	–	–	–	V_O= –5V, I_O= –5mA
Transition frequency	f_T	–	250	–	MHz	V_{CE}= –10V, I_E=5mA, f=100MHz ✻
Input resistance	R_1	7	10	13	kΩ	–
Resistance ratio	R_2 / R_1	0.8	1	1.2	–	–

✻ Transition frequency of the device

●Packaging specifications

Type	Package	Taping		
	Code	T2R	TN	T110
	Basic ordering unit (pieces)	8000	3000	3000
EMB11		○	—	—
UMB11N		—	○	—
IMB11A		—	—	○

●Electrical characteristic curves

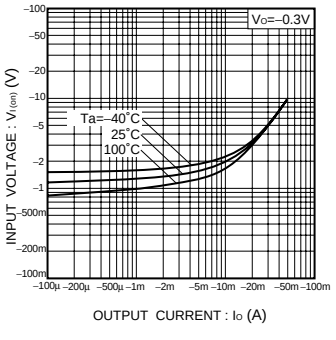


Fig.1 Input voltage vs. output current (ON characteristics)

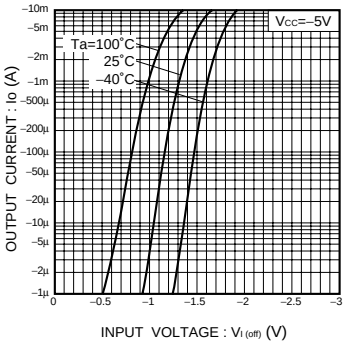


Fig.2 Output current vs. input voltage (OFF characteristics)

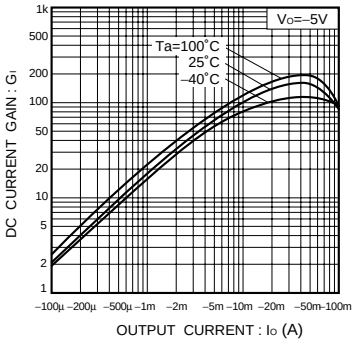


Fig.3 DC current gain vs. output current

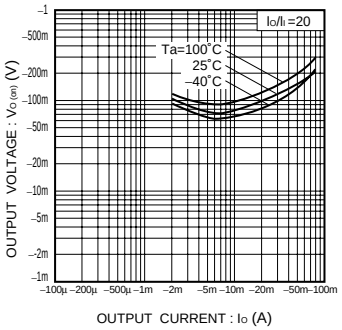


Fig.4 Output voltage vs. output current

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