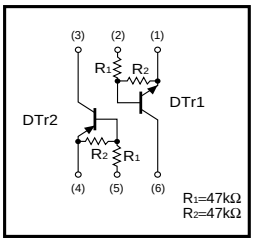
Power management (dual digital transistors)

EMD12 / UMD12N

●Features

1) Both the DTA144E and DTC144E in a EMT or UMT package.

●Equivalent circuit



●Package, marking, and packaging specifications

Type	EMD12	UMD12N
Package	EMT6	UMT6
Marking	D12	D12
Code	T2R	TR
Basic ordering unit (pieces)	8000	3000

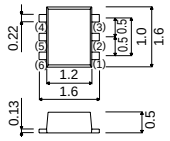
●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	40	V
		–10	
Output current	I_C	100	mA
	I_O	30	mA
Power dissipation	Pd	150(TOTAL)	mW ∗1
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55~+150	°C

∗1 120mW per element must not be exceeded.
PNP type negative symbols have been omitted

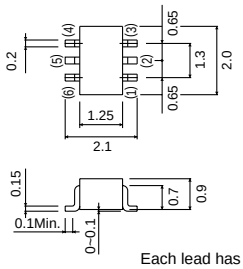
●External dimensions (Units : mm)

EMD12



ROHM : EMT6 Each lead has same dimensions

UMD12N



ROHM : UMT6
EIAJ : SC-88
Each lead has same dimensions

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	$V_{I\ (off)}$	–	–	0.5	V	V_{CC}=5/–5V, I_O=100/–100μA
	$V_{I\ (on)}$	3	–	–	V	V_O=0.3/–0.3V, I_O=2/–2mA
Output voltage	$V_{O\ (on)}$	–	0.1	0.3	V	I_O=10/–10mA, I_I=0.5/–0.5mA
Input current	I_I	–	–	0.18	mA	V_I=5/–5V
Output current	$I_{O\ (off)}$	–	–	0.5	μA	V_{CC}=50/–50V, V_I=0V
DC current gain	G_I	68	–	–	–	I_O=5/–5mA, V_O=5/–5V
Transition frequency	f_T	–	250	–	MHz	V_{CE}=10/–10V, I_E=–5/5mA, f=100MHz ∗
Input resistance	R_1	32.9	47	61.1	kΩ	–
Resistance ratio	R_2 / R_1	0.8	1	1.2	–	–

∗Transition frequency of the device. PNP type negative symbols have been omitted

●**Electrical characteristics curves DTr1 (DTC144E)**

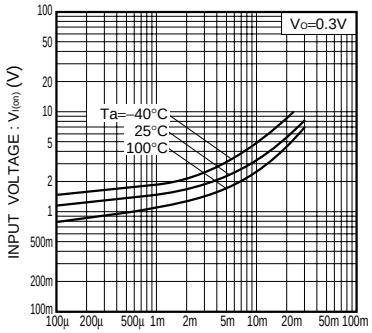


Fig.1 Input voltage vs. output current (ON characteristics)

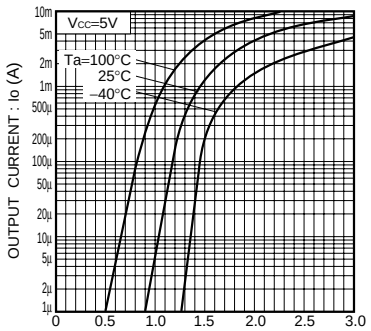


Fig.2 Output current vs. input voltage (OFF characteristics)

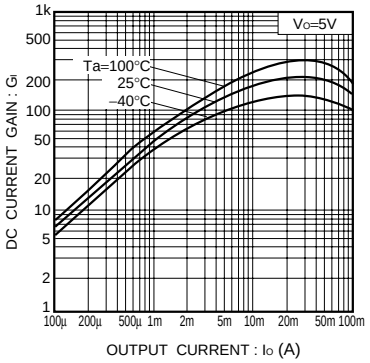


Fig.3 DC current gain vs. output current

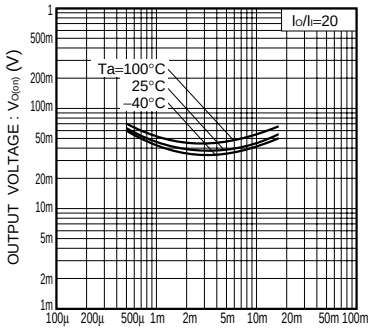


Fig.4 Output voltage vs. output current

●**Electrical characteristics curves DTr2 (DTA144E)**

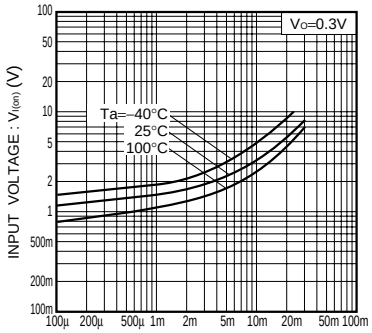


Fig.1 Input voltage vs. output current (ON characteristics)

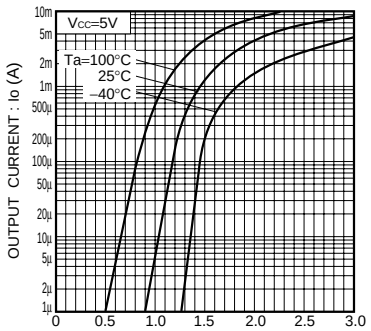


Fig.2 Output current vs. input voltage (OFF characteristics)

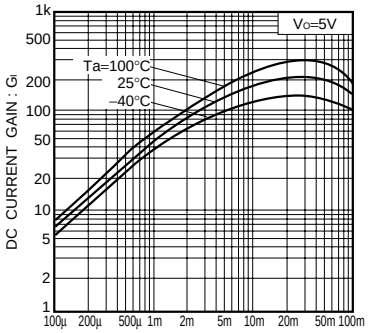


Fig.3 DC current gain vs. output current

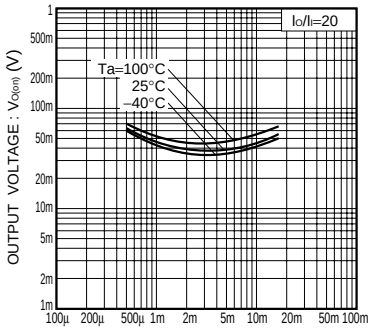


Fig.4 Output voltage vs. output current

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