

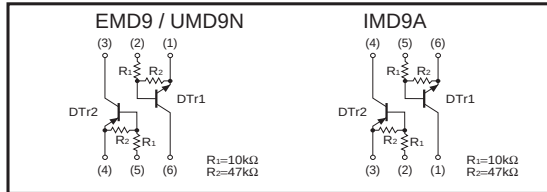
Digital Transistor (Dual Digital Transistors for Inverter Drive)

EMD9 / UMD9N / IMD9A

●Features

- 1) DTA114Y and DTC114Y transistors are built-in a EMT or UMT or SMT package.

●Inner circuit



●Package, marking, and packaging specifications

Type	EMD9	UMD9N	IMD9A
Package	EMT6	UMT6	SMT6
Marking	D9	D9	D9
Code	T2R	TR	T108
Basic ordering unit (pieces)	8000	3000	3000

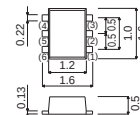
●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	-6 to +40	V
Output current	I_O	70	mA
Collector current	I_C (Max.)	100	mA
Power dissipation	Pd	150(TOTAL)	mW *1
		300(TOTAL)	mW *2
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

*1 120mW per element must not be exceeded. PNP type negative symbols have been omitted.
 *2 200mW per element must not be exceeded. PNP type negative symbols have been omitted.

●Dimensions (Unit : mm)

EMD9

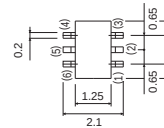


Each lead has same dimensions

ROHM : EMT6

Abbreviated symbol : D9

UMD9N

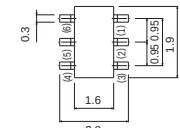
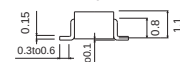


Each lead has same dimensions

ROHM : UMT6
EIAJ : SC-88

Abbreviated symbol : D9

IMD9A



Each lead has same dimensions

ROHM : SMT6
EIAJ : SC-74

Abbreviated symbol : D9

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	—	—	0.3	V	$V_{CC}=5V$, $I_O=100\mu A$
	$V_{I(on)}$	1.4	—	—	V	$V_O=0.3V$, $I_O=1mA$
Output voltage	$V_{O(on)}$	—	0.1	0.3	V	$I_O=5mA$, $I_i=0.25mA$
Input current	I_i	—	—	0.88	mA	$V_i=5V$
Output current	$I_{O(off)}$	—	—	0.5	mA	$V_{CC}=50V$, $V_i=0V$
DC current gain	G_i	68	—	—	—	$I_O=5mA$, $V_O=5V$
Transition frequency *	f_T	—	250	—	MHz	$V_{CE}=10V$, $I_E=-5mA$, $f=100MHz$
Input resistance	R_i	7	10	13	kW	—
Resistance ratio	R_2/R_1	3.7	4.7	5.7	—	—

PNP type negative symbols have been omitted.
 * Characteristics of built-in transistor.

●Electrical characteristics curves DTr1 (DTC114Y)

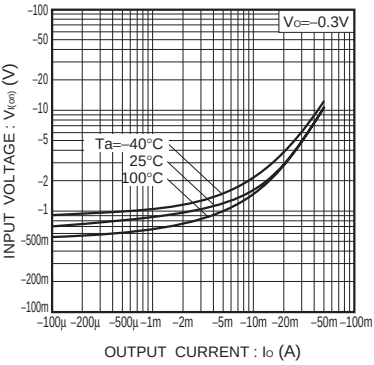


Fig.1 Input voltage vs. output current (ON characteristics)

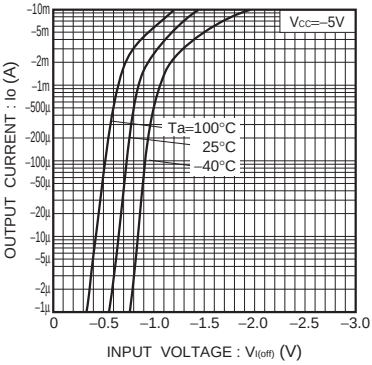


Fig.2 Output current vs. input voltage (OFF characteristics)

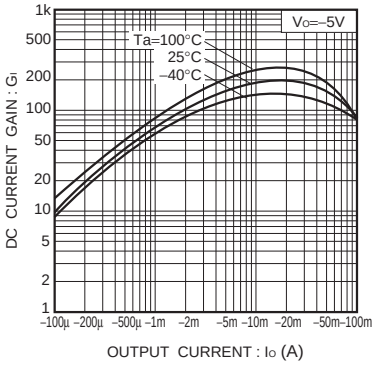


Fig.3 DC current gain vs. output current

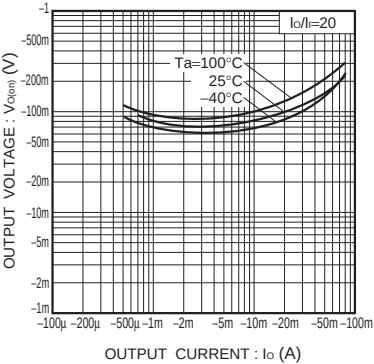


Fig.4 Output voltage vs. output current

●Electrical characteristics curves DTr2 (DTA114Y)

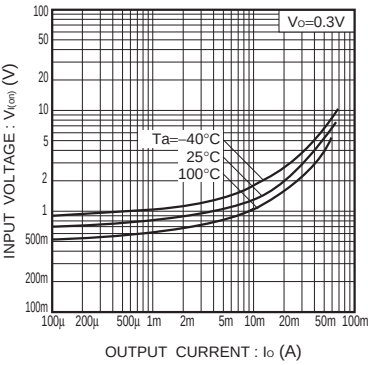


Fig.1 Input voltage vs. output current (ON characteristics)

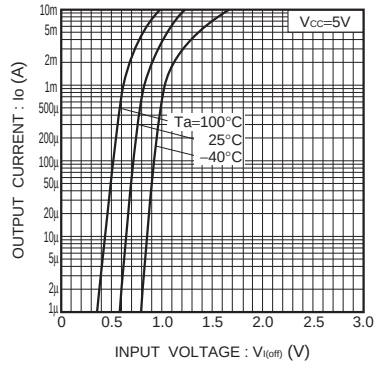


Fig.2 Output current vs. input voltage (OFF characteristics)

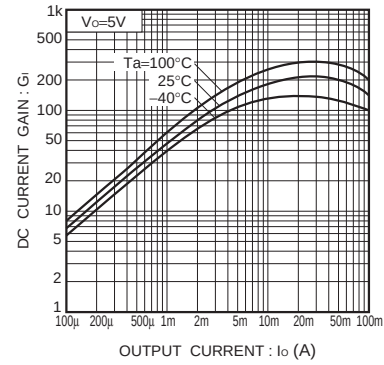


Fig.3 DC current gain vs. output current

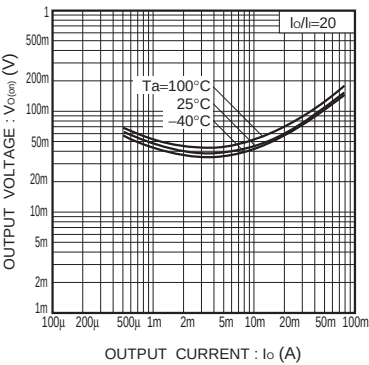


Fig.4 Output voltage vs. output current

Notes

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