

**DTC114EM / DTC114EE / DTC114EUA /
DTC114ECA / DTC114EKA / DTC114ESA**

- **Equivalent circuit**

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NPN digital transistor (with built-in resistors)

DTC114EM ROHM : VMT3 Abbreviated symbol : 24 (1) IN (2) GND (3) OUT	DTC114EE ROHM : EMT3 Abbreviated symbol : 24 (1) GND (2) IN (3) OUT
DTC114EUA ROHM : UMT3 EIAJ : SC-70 All terminals have same dimensions Abbreviated symbol : 24 (1) GND (2) IN (3) OUT	DTC114ECA ROHM : SST3 Each lead has same dimensions Abbreviated symbol : 24 (1) GND (2) IN (3) OUT
DTC114EKA ROHM : SMT3 EIAJ : SC-59 All terminals have same dimensions Abbreviated symbol : 24 (1) GND (2) IN (3) OUT	DTC114ESA ROHM : SPT EIAJ : SC-72 (1) GND (2) OUT (3) IN

DTC114EM / DTC114EE / DTC114EUA DTC114ECA / DTC114EKA / DTC114ESA

Transistors

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits(DTC114E□)						Unit
		M	E	UA	CA	KA	SA	
Supply voltage	V _{CC}	50						V
Input voltage	V _{IN}	-10~+40						V
Output current	I _o	50						mA
	I _{C(Max.)}	100						
Power dissipation	P _d	150		200			300	mW
Junction temperature	T _j	150						°C
Storage temperature	T _{stg}	-55~+150						°C

●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	—	—		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
Input resistance	R _I	7	10	13	kΩ	—
Resistance ratio	R ₂ /R ₁	0.8	1	1.2	—	—
Transition frequency	f _T	—	250	—	MHz	V _{CE} =10V, I _E =-5mA, f=100MHz *

* Transition frequency of the device

●Packaging specifications

Type	Package	VMT3	EMT3	UMT3	SST3	SMT3	SPT
	Packaging type	Taping	Taping	Taping	Taping	Taping	Taping
	Code	T2L	TL	T106	T116	T146	TP
	Basic ordering unit (pieces)	8000	3000	3000	3000	3000	5000
DTC114EM		○	—	—	—	—	—
DTC114EE		—	○	—	—	—	—
DTC114EUA		—	—	○	—	—	—
DTC114ECA		—	—	—	○	—	—
DTC114EKA		—	—	—	—	○	—
DTC114ESA		—	—	—	—	—	○

●Electrical characteristic curves

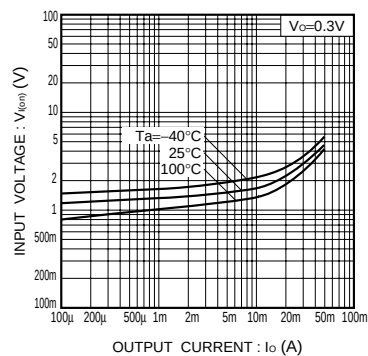


Fig.1 Input voltage vs. output current (ON characteristics)

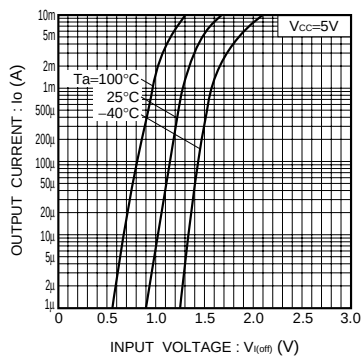


Fig.2 Output current vs. input voltage (OFF characteristics)

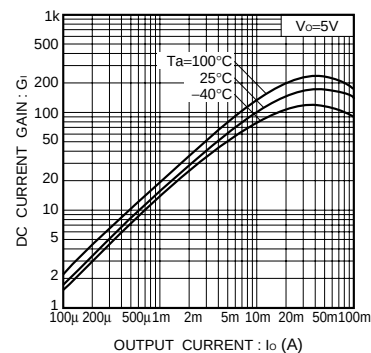


Fig.3 DC current gain vs. output current

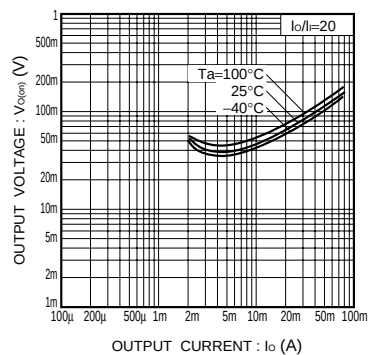


Fig.4 Output voltage vs. output current

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