



Digital Transistors(built-in resistors)

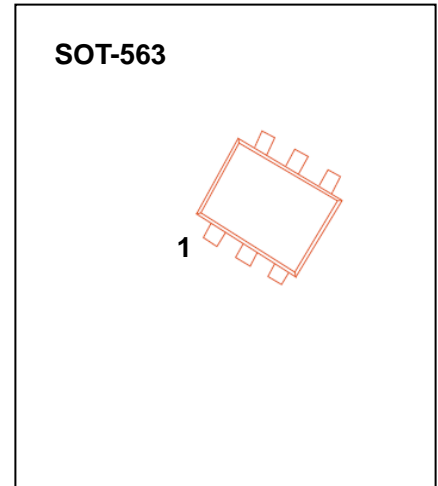
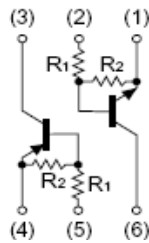
EMD9 dual digital transistors (NPN+PNP)

FEATURES

Two DTA114Y and DTC114Y transistors are built-in a package

Marking: D9

Equivalent circuit



DTr1 Absolute maximum ratings (T_a=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V _{CC}	50	V
Input voltage	V _{IN}	-6~+40	V
Output current	I _O	70	mA
	I _{C(MAX)}	100	
Power dissipation	P _d	150	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55~150	°C

Electrical characteristics (T_a=25°C)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input voltage	V _{I(off)}	0.3			V	V _{CC} =5V ,I _o =100μA
	V _{I(on)}			1.4		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	μA	V _{CC} =50V, V _I =0
DC current gain	G _I	68				V _o =5V ,I _o =5mA
Input resistance	R ₁	7	10	13	KΩ	
Resistance ratio	R ₂ /R ₁	3.7	4.7	5.7		
Transition frequency	f _T		250		MHz	V _o =10V ,I _o =5mA,f=100MHz

DTr2 Absolute maximum ratings (T_a=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V _{CC}	-50	V
Input voltage	V _{IN}	-40~+6	V
Output current	I _O	-70	mA
	I _{C(MAX)}	-100	
Power dissipation	P _d	150	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55~150	°C

Electrical characteristics (T_a=25°C)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input voltage	V _{I(off)}	-0.3			V	V _{CC} =-5V, I _O =-100μA
	V _{I(on)}			-1.4		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	μA	V _{CC} =-50V, V _I =0
DC current gain	G _I	68				V _O =-5V, I _O =-5mA
Input resistance	R ₁	7	10	13	KΩ	
Resistance ratio	R ₂ /R ₁	3.7	4.7	5.7		
Transition frequency	f _T		250		MHz	V _O =-10V, I _O =-5mA, f=100MHz