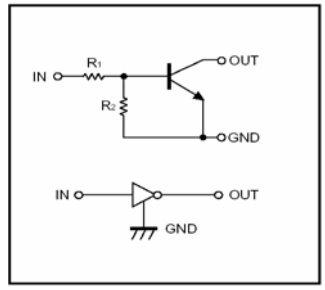
DTC114WE/DTC114WUA/DTC114WCA
DTC114WKA/DTC114WSA

Digital Transistor(NPN)

Features

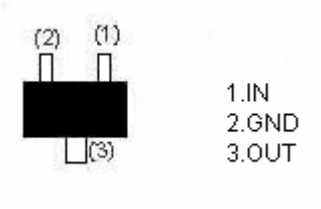
1) Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
2) The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.
3) Only the on/off conditions need to be set for operation, making device design easy.

●Equivalent circuit



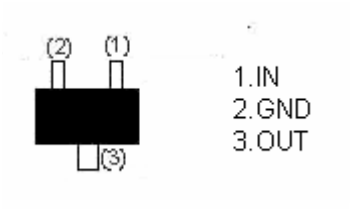
PIN CONNENCTIONS AND MARKING

DTC114WE



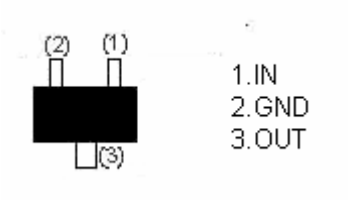
SOT-523 Addreviated symbol: 84

DTC114WUA



SOT-323 Addreviated symbol: 84

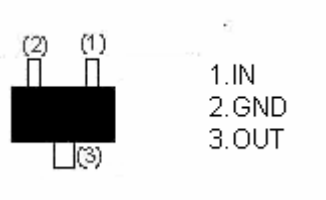
DTC114WKA



SOT-23-3L

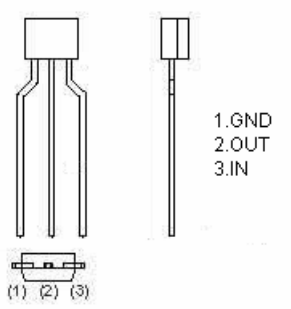
Addreviated symbol: 84

DTC114WCA



SOT-23 Addreviated symbol: 84

DTC114WSA



TO-92S

DTC114WE/DTC114WUA/DTC114WCA
DTC114WKA/DTC114WSA

Digital Transistor(NPN)

Absolute maximum ratings (Ta=25℃)

Parameter	Symbol	Limits (DTC114W)					Unit
		E	UA	CA	KA	SA	
Supply voltage	V_{CC}	50					V
Input voltage	V_{IN}	-10~30					V
Output current	I_O	100					mA
	$I_{C(MAX)}$	100					
Power dissipation	Pd	150	200			300	mW
Junction temperature	Tj	150					℃
Storage temperature	Tstg	-55~150					℃

Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$			0.8	V	V_{CC}=5V ,I_O=100μA
	$V_{I(on)}$	3				V_O=0.3V ,I_O=2 mA
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=0
DC current gain	G_I	24				V_O=5V, I_O=10mA
Input resistance	R_1	7	10	13	KΩ	
Resistance ratio	R_2/R_1	0.37	0.47	0.57		
Transition frequency	f_T		250		MHz	V_O=10V, I_O=5mA, f=100MHz