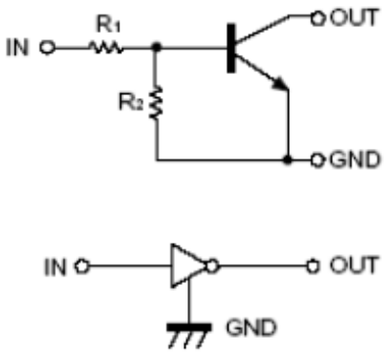
DIGITAL TRANSISTOR (NPN)

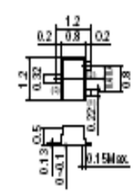
Digital Transistor (built-in resistor)

FEATURES

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
- 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.
- Only the on/off conditions need to be set for operation, making device design easy.



DTC144EM

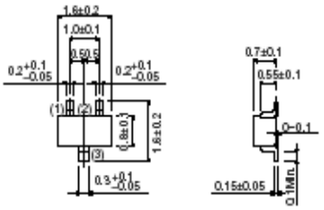


ROHM : VMT3

Abbreviated symbol : 26

(1) IN
(2) GND
(3) OUT

DTC144EE

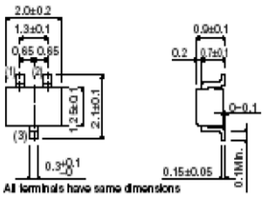


ROHM : EMT3

Abbreviated symbol : 26

(1) GND
(2) IN
(3) OUT

DTC144EUA



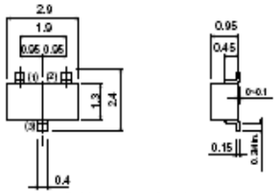
ROHM : UMT3
EIAJ : SC-70

All terminals have same dimensions

Abbreviated symbol : 26

(1) GND
(2) IN
(3) OUT

DTC144ECA



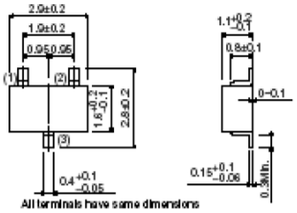
ROHM : SST3

Each lead has same dimensions

Abbreviated symbol : 26

(1) GND
(2) IN
(3) OUT

DTC144EKA



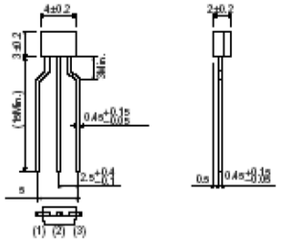
ROHM : SMT3
EIAJ : SC-59

All terminals have same dimensions

Abbreviated symbol : 26

(1) GND
(2) IN
(3) OUT

DTC144ESA



ROHM : SPT
EIAJ : SC-72

(1) GND
(2) OUT
(3) IN

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

ABSOLUTE MAXIMUM RATINGS

Parameters	Symbols	Limits (DTC144E□)						UNITS
		M	E	UA	CA	KA	SA	
Collector-Base Voltage	$V_{(BR)CBO}$	50						V
Collector-Emitter Voltage	$V_{(BR)CEO}$	50						V
Emitter-Base Voltage	$V_{(BR)EBO}$	5						V
Collector Current	I_C	100						mA
Collector Power Dissipation	P_C	150		200			300	mW
Junction Temperature	T_j	150						℃
Storage Temperature	T_{stg}	-55~150						℃

ELECTRICAL CHARACTERISTICS

Parameters	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I\ (off)}$ $V_{I\ (on)}$	V_{CC}=5V ,I_O=100μA V_O=0.3V ,I_O=2mA	3		0.5	V
Output Voltage	$V_{O\ (on)}$	I_O/I_I=10mA/0.5mA			0.3	V
Input Current	I_I	V_I=5V			0.18	mA
Output Current	$I_{O\ (off)}$	V_{CC}=50V ,V_I=0			0.5	μA
DC Current Gain	G_I	V_O=5V ,I_O=5mA	68			
Input Resistance	R_1		32.9	47	61.1	KΩ
Resistance Ratio	R_2/R_1		0.8	1	1.2	
Transition Frequency	f_T	V_{CE}=10V, I_E=-5mA, f=100MHz		250		MHz