



Micro Commercial Components



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# DTC123JM

## NPN Digital Transistors

### Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors
- 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
- Halogen free available upon request by adding suffix "-HF"

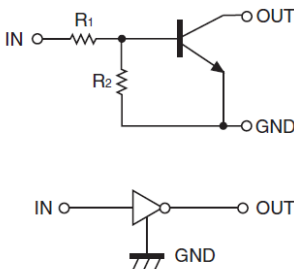
### Absolute maximum ratings @ 25°C

Symbol	Parameter	Min	Typ	Max	Unit
$V_{CC}$	Supply voltage	---	50	---	V
$V_{IN}$	Input voltage	-5	---	12	V
$I_O$	Output current	---	100	---	mA
$P_d$	Power dissipation	---	100	---	mW
$T_j$	Junction temperature	---	150	---	°C
$T_{slg}$	Storage temperature	-55	---	150	°C

### Electrical Characteristics @ 25°C

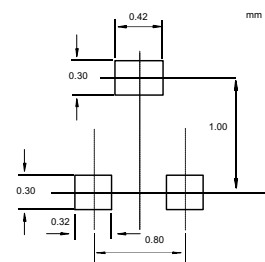
Symbol	Parameter	Min	Typ	Max	Unit
$V_{I(off)}$	Input voltage ( $V_{CC}=5V, I_O=100 \mu A$ )	0.5	---	---	V
$V_{I(on)}$	Input voltage ( $V_O=0.3V, I_O=5mA$ )	---	---	1.1	V
$V_{O(on)}$	Output voltage ( $I_O/I_I=5mA/0.25mA$ )	---	0.1	0.3	V
$I_I$	Input current ( $V_I=5V$ )	---	---	3.6	mA
$I_{O(off)}$	Output current ( $V_{CC}=50V, V_I=0$ )	---	---	0.5	$\mu A$
$G_1$	DC current gain ( $V_O=5V, I_O=10mA$ )	80	---	---	
$R_1$	Input resistance	1.54	2.2	2.86	K $\Omega$
$R_2/R_1$	Resistance ratio	17	21	26	
$f_T$	Transition frequency ( $V_O=10V, I_E=5mA, f=100MHz$ )	---	250	---	MHz

### Equivalent circuit

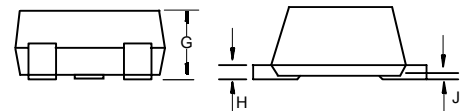
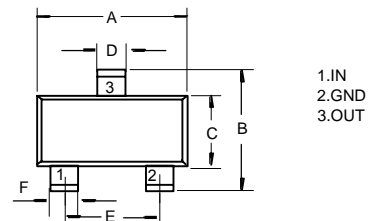


Marking: E42

### Suggested Solder Pad Layout



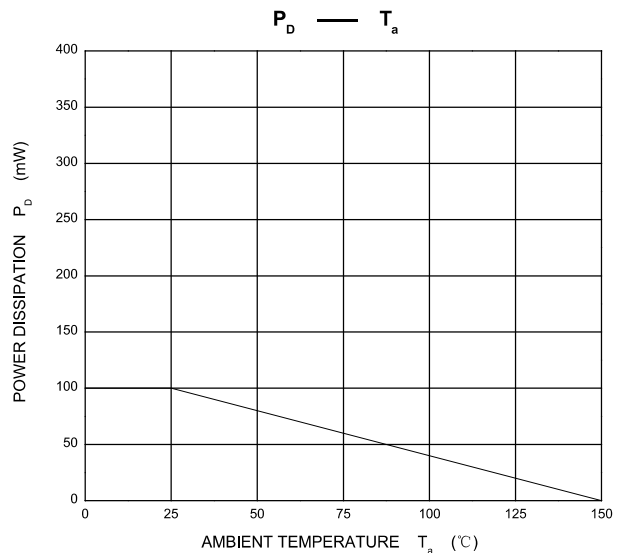
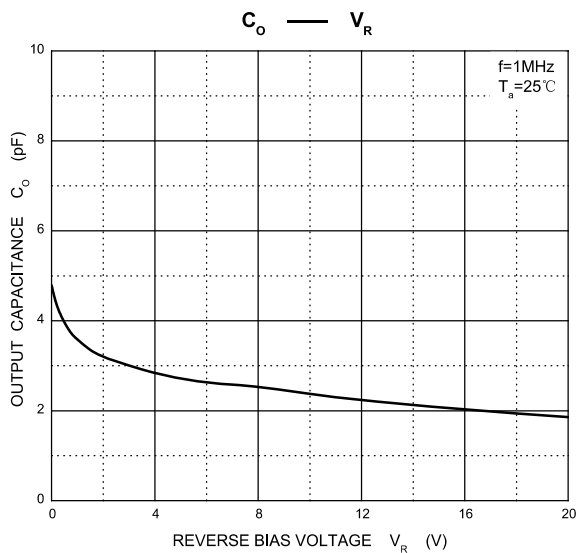
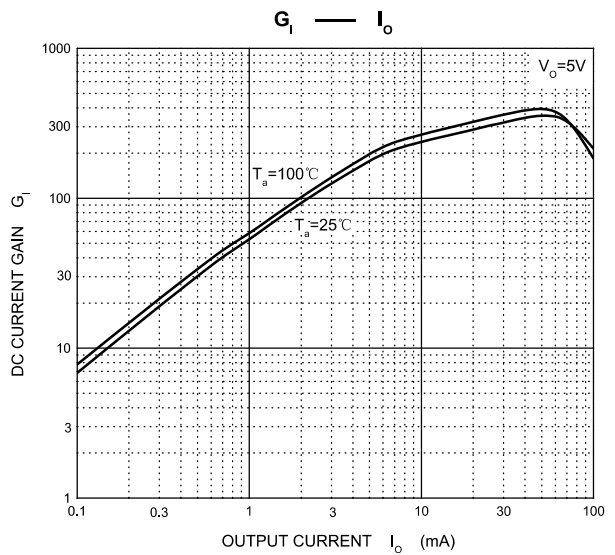
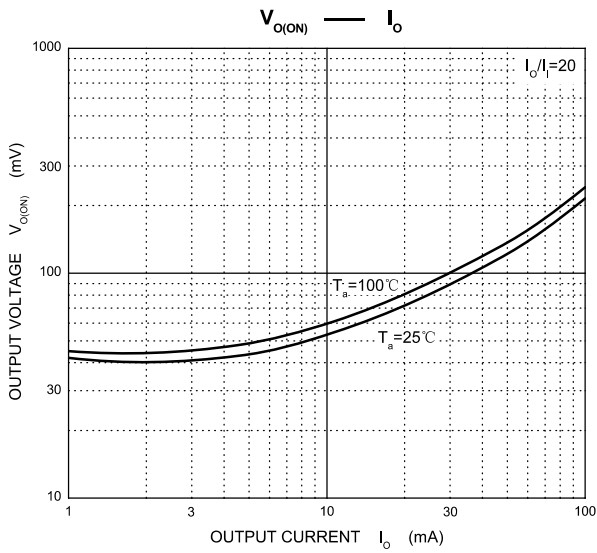
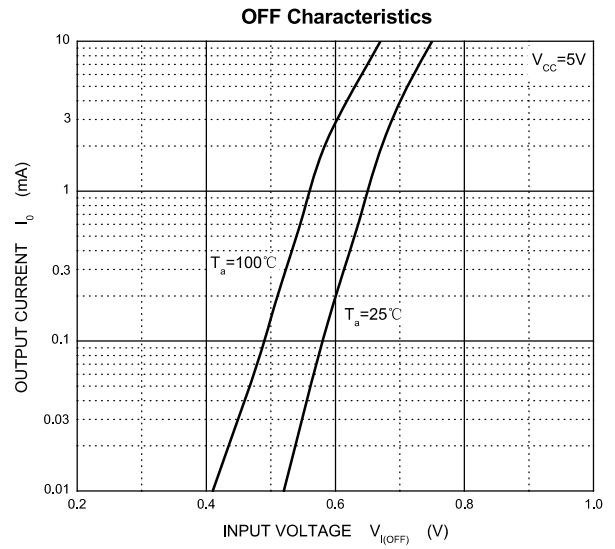
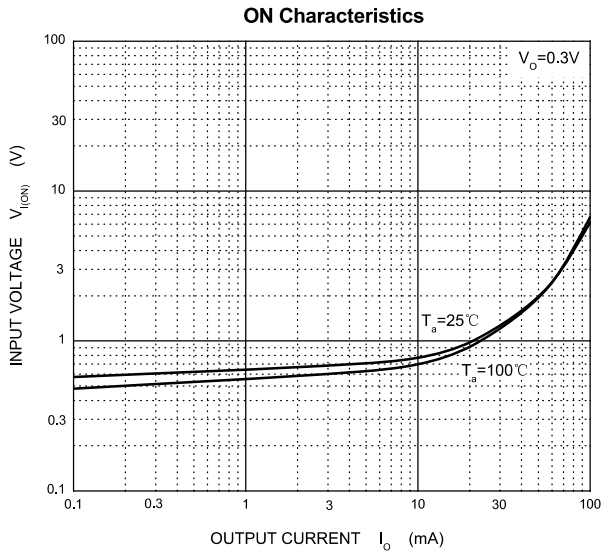
### SOT-723



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.045	.049	1.15	1.25	
B	.045	.049	1.15	1.25	
C	.030	.033	0.75	0.85	
D	.011	.015	0.27	0.37	
E	0.031TYP.		0.80TYP.		
F	.007	.011	0.17	0.27	
G	.017	.020	0.43	0.50	
H	.003	.006	0.08	0.15	
J	.000	.002	0.00	0.05	

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## Typical Characteristics





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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel; 8Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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