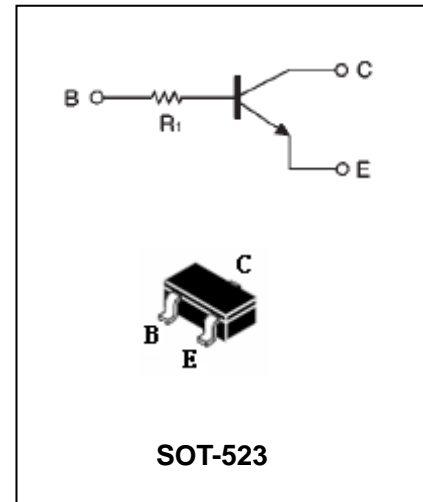


## Digital Transistor

## DTCXXXTE

### FEATURES

- Epitaxial planar die construction.
- Complementary PNP types available(DTC).
- Built-in biasing resistors, $R_1$ only.
- Also available in lead free version.
- MSL 1



### APPLICATIONS

- The NPN style digital transistor.

### ORDERING INFORMATION

Type No.	Marking	Package Code
DTC114TE	04	SOT-523
DTC143TE	03	SOT-523
DTC144TE	06	SOT-523

### MAXIMUM RATING @ $T_a=25^{\circ}\text{C}$ unless otherwise specified

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	50	V
$V_{CEO}$	Collector-Emitter Voltage	50	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C(\text{Max.})$	Collector Current	100	mA
$P_D$	Power Dissipation	150	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient Air	625	$^{\circ}\text{C}/\text{W}$
$T_j, T_{stg}$	Operating and Storage and Temperature Range	-55 to +150	$^{\circ}\text{C}$

## Digital Transistor

## DTCXXXTE

### ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-Base breakdown Voltage	$BV_{CBO}$	$I_C=50\mu A$	50	-	-	V
Collector-Emitter breakdown Voltage	$BV_{CEO}$	$I_C=1mA$	50	-	-	V
Emitter-Base breakdown Voltage	$BV_{EBO}$	$I_E=50\mu A$	5	-	-	V
Collector cutoff Current	$I_{CBO}$	$V_{CB}=50V$	-	-	0.5	$\mu A$
Emitter cutoff Current	$I_{EBO}$	$V_{EB}=4V$	-	-	0.5	$\mu A$
Collector-Emitter saturation voltage DTC114TE DTC143TE DTC144TE	$V_{CE(sat)}$	$I_C/I_B=10mA/1mA$ $I_C/I_B=5mA/0.25mA$ $I_C/I_B=5mA/0.5mA$	-	-	0.3	V
DC Current Gain	$h_{FE}$	$I_C=1mA, V_{CE}=5V$	100	250	600	
Input Resistor DTC143TE DTC114TE DTC144TE	$R_1$		7 3.29 32.9	10 4.7 47	13 6.11 61.1	$k\Omega$
Input Resistor( $R_1$ )Tolerance	$\Delta R_1$	-	-30		+30	%
Gain-Bandwidth Product	$f_T$	$V_{CE}=-10V, I_E=-5mA,$ $f=100MHz$	-	250	-	MHz

### TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

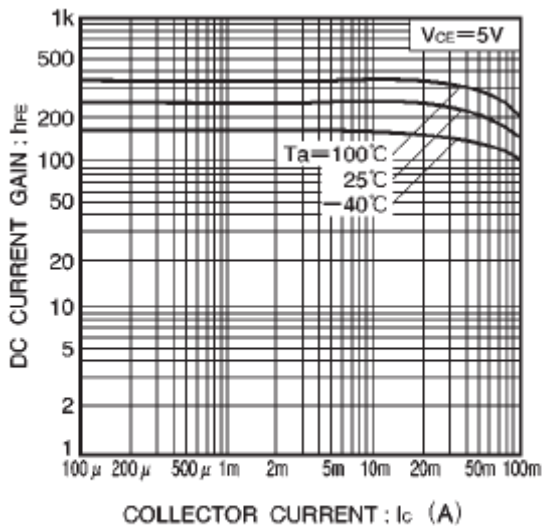


Fig.1 DC current gain vs. collector current

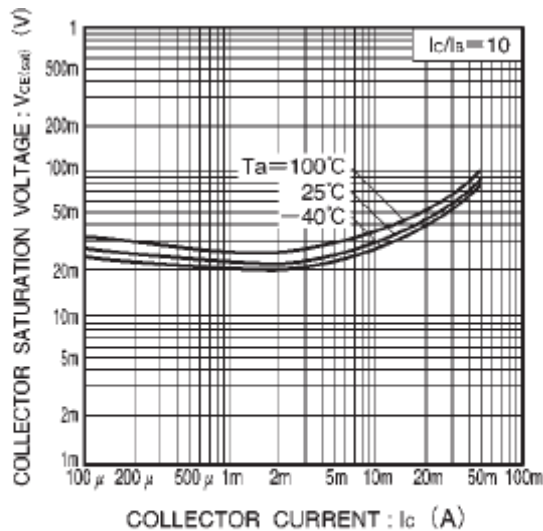


Fig.2 Collector-emitter saturation voltage vs. collector current

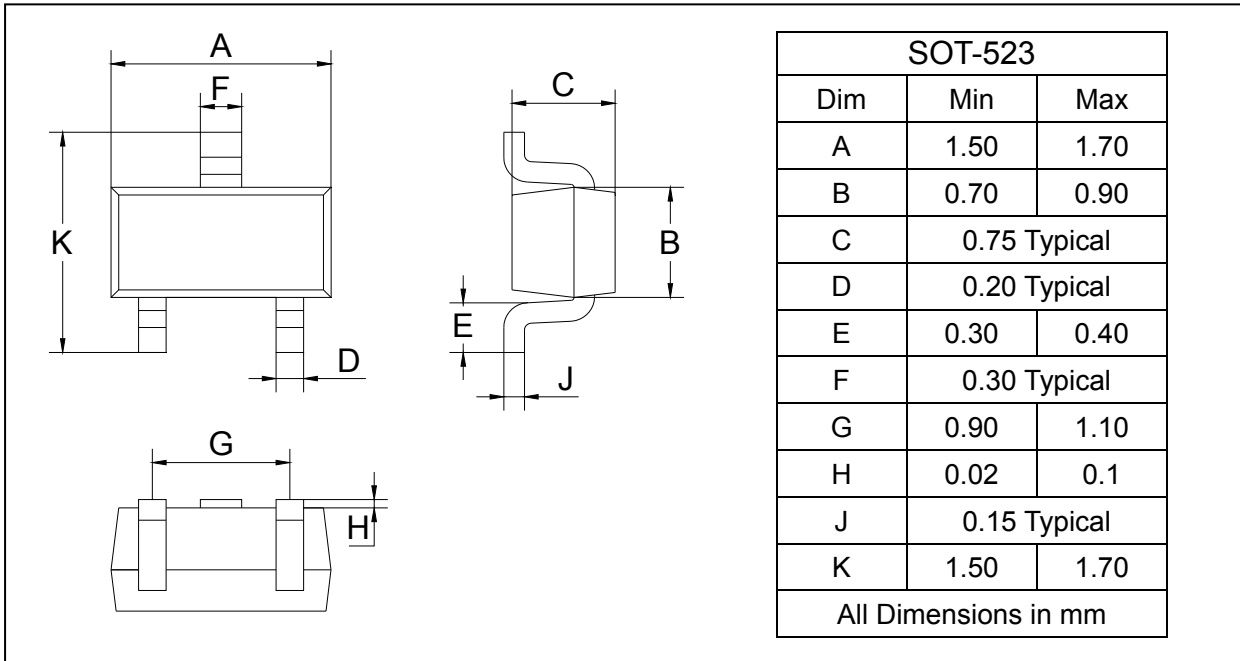
## Digital Transistor

## DTCXXXTE

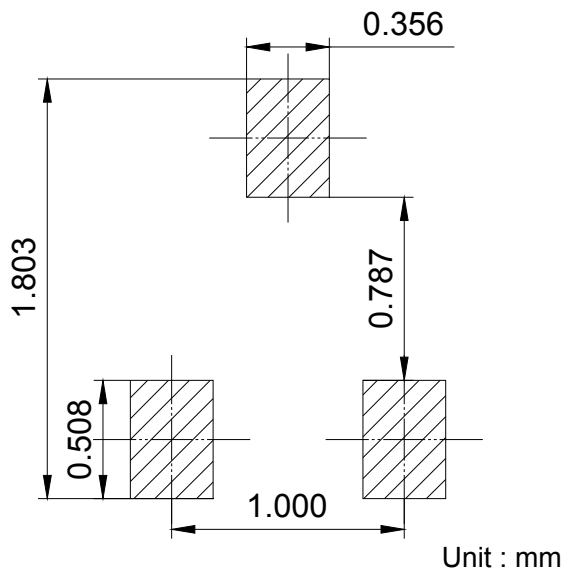
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-523



### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

Device	Package	Shipping
DTC114TE/143TE/144TE	SOT-523	3000/Tape&Reel