

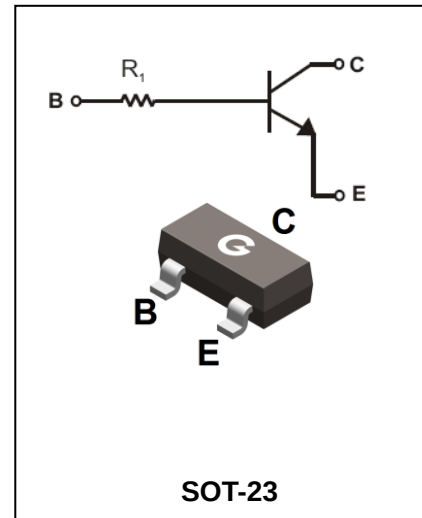
Digital Transistor

TDTC(R₁-only SERIES)CA

FEATURES

- Epitaxial planar die construction
- Complementary PNP types available(TDTA)
- Built-in biasing resistor, R₁ only
- Also available in lead free version
- Halogen free
- Qualified to AEC-Q101 standards for high reliability

HF



APPLICATIONS

- The NPN style digital transistor

ORDERING INFORMATION

Type No.	Marking	Package Code
TDTC114TCA	04	SOT-23
TDTC143TCA	03	SOT-23
TDTC144TCA	06	SOT-23
TDTC123TCA	02	SOT-23

MAXIMUM RATING @ Ta=25°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 (Max.)	Collector Current	100	mA
P _D	Power Dissipation	200	mW
R _{θJA}	Thermal Resistance, Junction to Ambient Air	625	°C/W
T _J , T _{STG}	Operating and Storage and Temperature Range	-55 to +150	°C

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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	μA
Emitter cutoff Current	I_{EBO}	$V_{EB}=4V$	-	-	0.5	μA
Collector-Emitter saturation voltage TDTC114TCA TDTC143TCA TDTC144TCA TDTC123TCA	$V_{CE(sat)}$	$I_C/I_B=10mA/1mA$ $I_C/I_B=5mA/0.25mA$ $I_C/I_B=5mA/0.5mA$ $I_C/I_B=5mA/0.25mA$	-	-	0.3	V
DC Current Gain	h_{FE}	$I_C=1mA, V_{CE}=5V$	100	250	600	
Input Resistor(R ₁) TDTC114TCA TDTC143TCA TDTC144TCA TDTC123TCA	R_1		7 3.29 32.9 1.54	10 4.7 47 2.2	13 6.11 61.1 2.86	k Ω
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_E=-5mA,$ $f=100MHz$	-	250	-	MHz

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

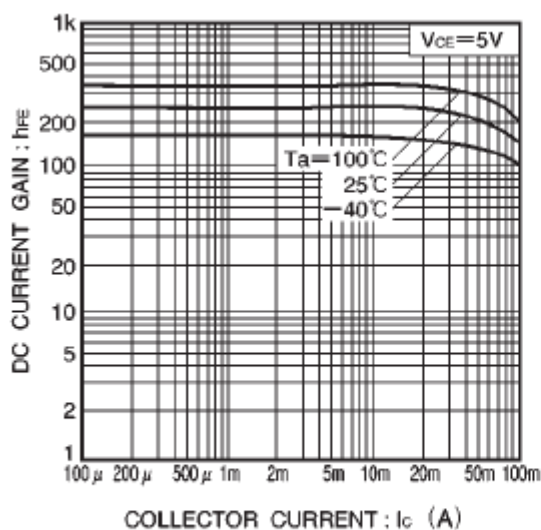


Fig.1 DC current gain vs. collector current

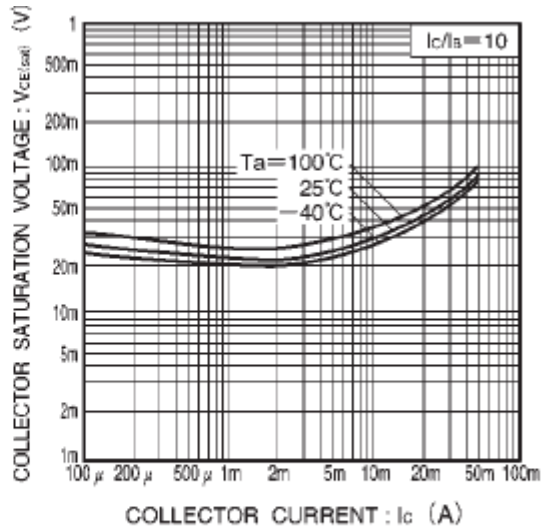


Fig.2 Collector-emitter saturation voltage vs. collector current

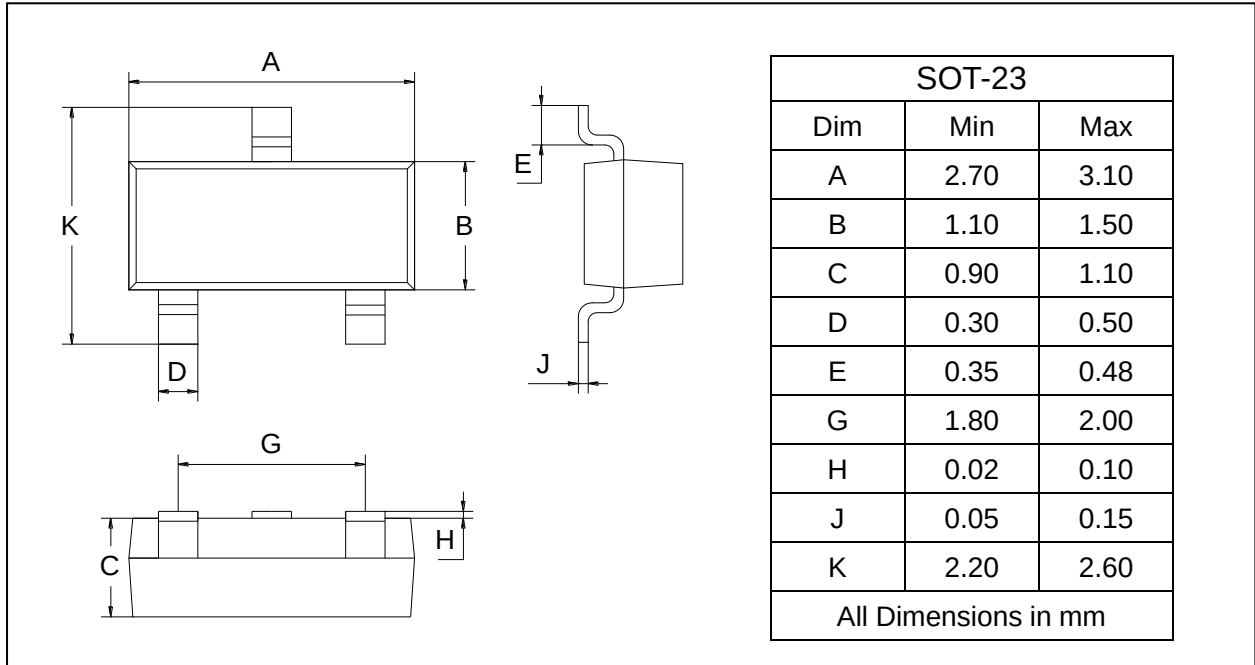
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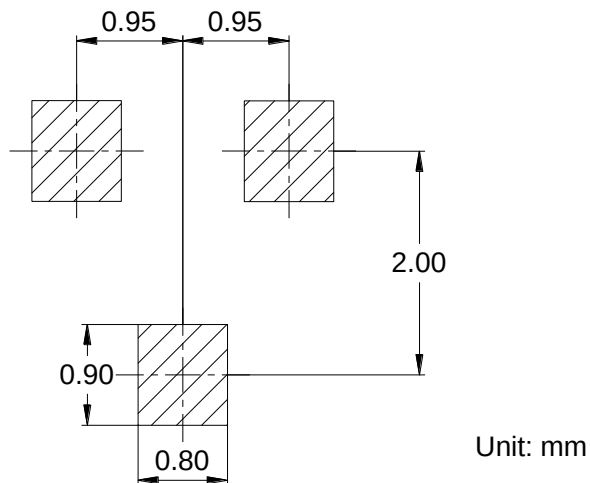
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
TDTC143TCA/114TCA/144TCA/123TCA	SOT-23	3000 pcs / Tape & Reel