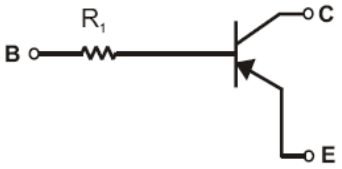
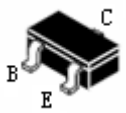
Digital Transistor — TDTA(R_1-only SERIES)UA

FEATURES

HF

- Epitaxial planar die construction
- Complementary NPN types available(TDTC)
- Built-in biasing resistor, R_1 only
- Halogen free
- Qualified to AEC-Q101 standards for high reliability





SOT-323

APPLICATIONS

- The PNP style digital transistor

ORDERING INFORMATION

Type No.	Marking	Package Code
TDTA114TUA	94	SOT-323
TDTA143TUA	93	SOT-323
TDTA144TUA	96	SOT-323

MAXIMUM RATING @ T_A = 25℃ 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
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient Air	625	℃/W
T_J, T_{STG}	Operating and Storage and Temperature Range	-55 to +150	℃

Digital Transistor — TDTA(R_1-only SERIES)UA

ELECTRICAL CHARACTERISTICS @ T_A = 25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-Base breakdown Voltage	BV_{CBO}	I_C=-50μA	-50			V
Collector-Emitter breakdown Voltage	BV_{CEO}	I_C=-1mA	-50			V
Emitter-Base breakdown Voltage	BV_{EBO}	I_E=-50μA	-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 TDTA114TUA TDTA143TUA TDTA144TUA	$V_{CE(sat)}$	 I_C/I_B=-1mA/-0.1mA I_C/I_B=-2.5mA/-0.25mA I_C/I_B=-2.5mA/-0.25mA			-0.3	V
DC Current Gain	h_{FE}	I_C=-1mA,V_{CE}=-5V	100	250	600	
Input Resistor(R_1) TDTA114TUA TDTA143TUA TDTA144TUA	R_1		7 3.19 31.9	10 4.7 47	13 6.11 61.1	KΩ
Input Resistor(R_1)Tolerance	ΔR_1		-30		+30	%
Gain-Bandwidth Product	f_T	V_{CE}=-10V,I_E=-5mA, f=100MHz	-	250	-	MHz

Digital Transistor — TDTA(R1-only SERIES)UA

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

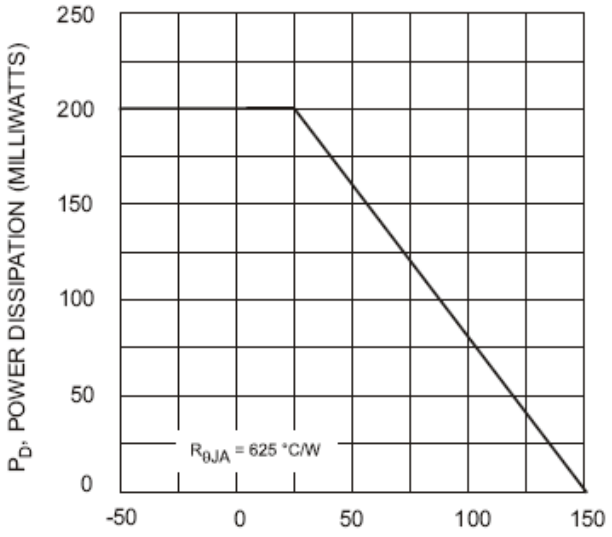


Fig. 1 Derating Curve

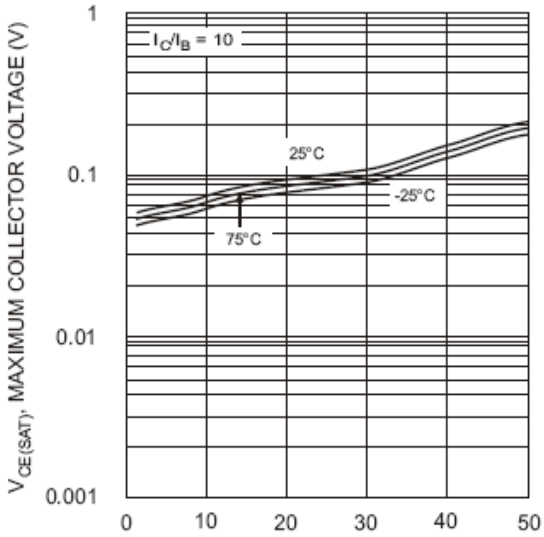


Fig. 2 $V_{CE(SAT)}$ vs. I_C

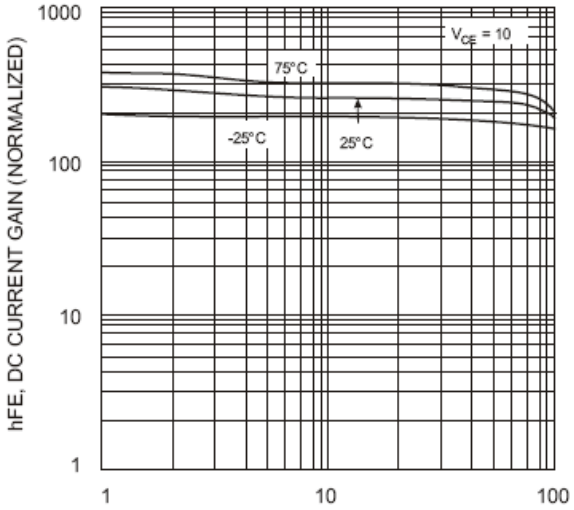


Fig. 3 DC Current Gain

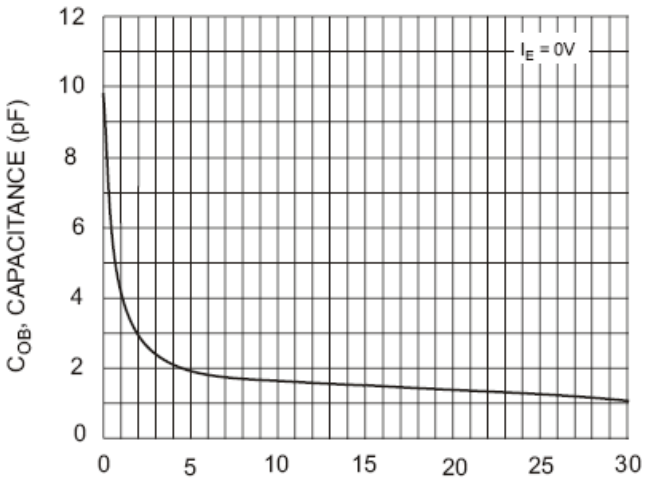


Fig. 4 Output Capacitance

Digital Transistor

TDTA(R_1-only SERIES)UA

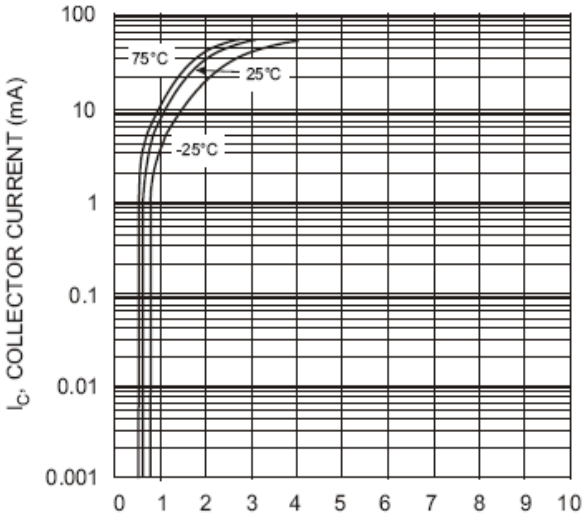


Fig. 5 Collector Current Vs. Input Voltage

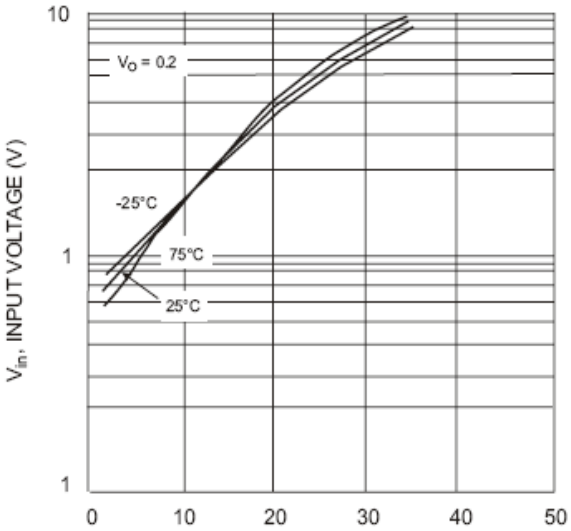
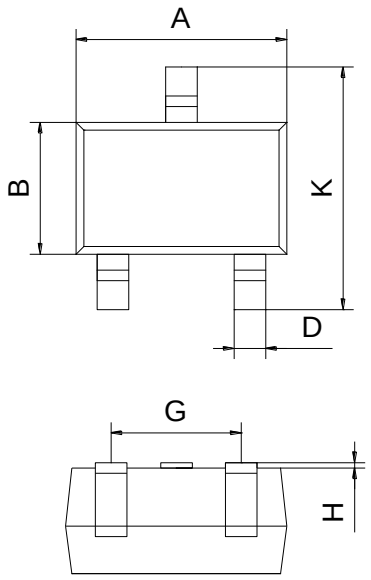


Fig. 6 Input Voltage vs. Collector Current

Digital Transistor — TDTA(R_1-only SERIES)UA

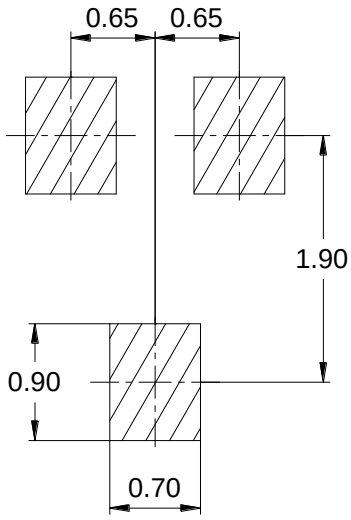
PACKAGE OUTLINE

Plastic surface mounted package — SOT-323



SOT-323		
Dim	Min	Max
A	2.00	2.20
B	1.15	1.35
C	0.90	1.10
D	0.15	0.35
E	0.25	0.40
G	1.20	1.40
H	0.02	0.10
J	0.05	0.15
K	2.20	2.40
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit: mm

PACKAGE INFORMATION

Device	Package	Shipping
TDTA114TUA/143TUA/144TUA	SOT-323	3000 pcs / Tape & Reel