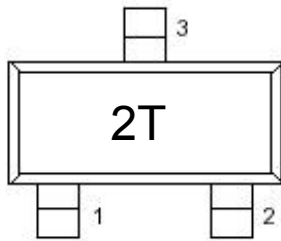


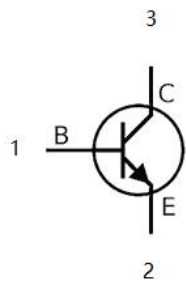
CDS4403-ME

SWITCHING TRANSISTOR

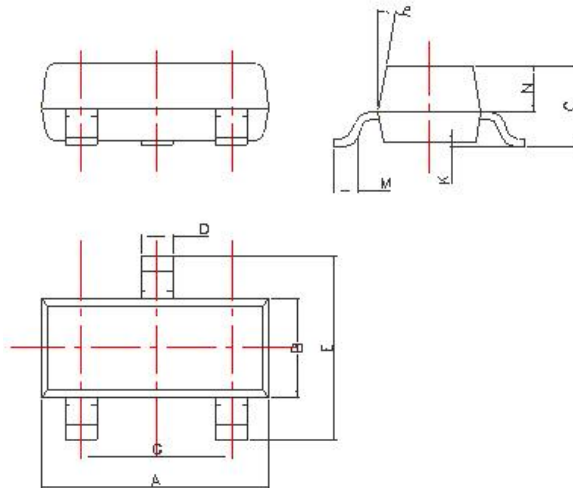
Marking: 2T



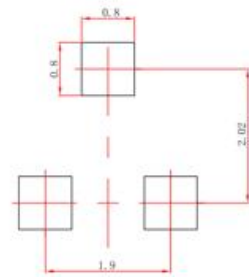
Top view



SOT-23 Dimension



DIM	Millimeters
A	2.85~3.04
B	1.30±0.10
C	1.00±0.10
D	0.45±0.05
E	2.25~2.55
G	1.90±0.1
K	0.00-0.10
M	0.20 min
N	0.60±0.10
P	7±2°

SOT-23
Suggested
Layout

mm(±0.05mm)

MAXIMUM RATINGS (Ta=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	V _{CEO}	-40	Vdc
Collector-Base Voltage	V _{CBO}	-40	Vdc
Emitter-Base Voltage	V _{EBO}	-5	Vdc
Collector Current - Continuous	I _C	-600	mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (1) (T _A =25°C)	P _D	225	mW
Derate above 25°C		1.8	mW/°C
Thermal Resistance Junction to Ambient	R _{JA}	556	°C/W
Total Device Dissipation Alumina Substrate, (2) T _A =25°C	P _D	300	mW
Derate above 25°C		2.4	mW/°C
Thermal Resistance Junction to Ambient	R _{JA}	417	°C/W
Junction and Storage Temperature	T _J , T _{stg}	150, -55~150	°C

CDS4403-ME

SWITCHING TRANSISTOR

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise noted)

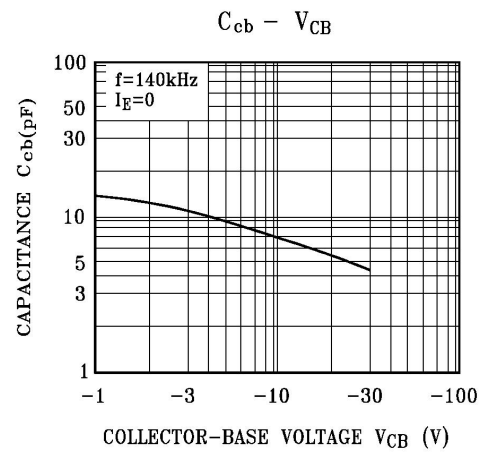
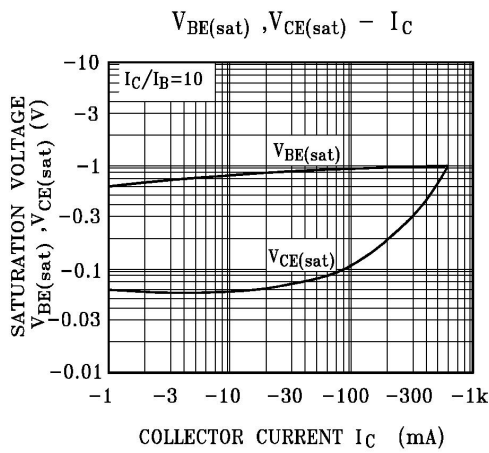
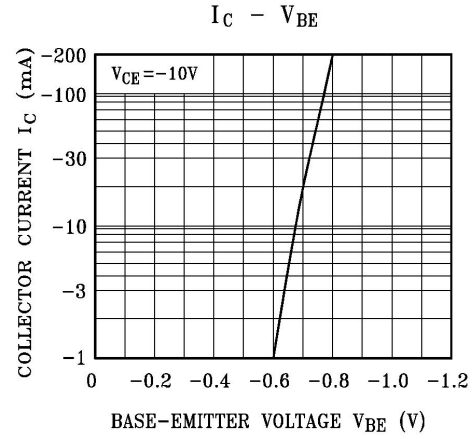
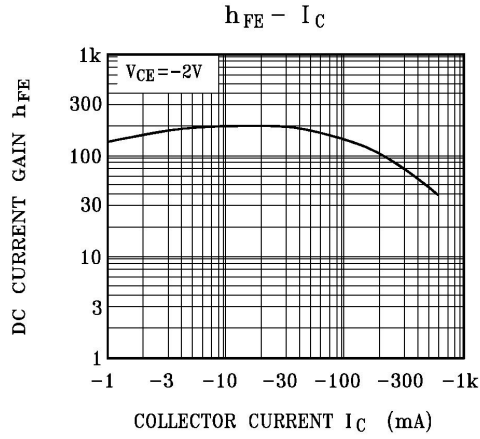
Characteristic	Symbol	Test Condition	Min	Type	Max	Unit
Collector Cutoff Current	I_{CEX}	$V_{CE}=-35V_{dc}$, $V_{EB}=-0.4V_{dc}$	--	--	-100	nAdc
Base Cutoff Current	I_{BEX}	$V_{CE}=-35V_{dc}$, $V_{EB}=-0.4V_{dc}$	--	--	-100	nAdc
Collector-Emitter Breakdown Voltage (3)	$V_{(BR)CEO}$	$I_C=-1.0mA_{dc}$, $I_B=0$	-40	--	--	Vdc
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-100\mu A_{dc}$, $I_E=0$	-40	--	--	Vdc
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-100\mu A_{dc}$, $I_C=0$	-5	--	--	Vdc
DC Current Gain	h_{FE}	$I_C=-0.1mA_{dc}$, $V_{CE}=-1.0V_{dc}$	30	--	--	--
		$I_C=-1.0mA_{dc}$, $V_{CE}=-1.0V_{dc}$	30	--	--	
		$I_C=-10mA_{dc}$, $V_{CE}=-1.0V_{dc}$	100	--	--	
		$I_C=-150mA_{dc}$, $V_{CE}=-2.0V_{dc}$	100	--	300	
		$I_C=-500mA_{dc}$, $V_{CE}=-2.0mA_{dc}$	20	--	--	
Collector-Emitter Saturation Voltage (3)	$V_{CE(sat)}$	$I_C=-150mA_{dc}$, $I_B=-15V_{dc}$	--	--	-0.4	Vdc
		$I_C=-500mA_{dc}$, $I_B=-50V_{dc}$	--	--	-0.75	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-150mA_{dc}$, $I_B=-15V_{dc}$	-0.75	--	-0.95	Vdc
		$I_C=-500mA_{dc}$, $I_B=-50V_{dc}$	--	--	-1.3	
Current-Gain-Bandwidth Product	f_T	$I_C=-20mA_{dc}$, $V_{CE}=-10V_{dc}$ $f=100MHz$	200	--	--	MHz
Output Capacitance	C_{obo}	$V_{CB}=-10V_{dc}$, $I_E=0$, $f=1.0MHz$	--	--	8.5	pF
Input Capacitance	C_{ibo}	$V_{EB}=-0.5V_{dc}$, $I_C=0$, $f=1.0MHz$	--	--	30	pF
Input Impedance	h_{ie}	$V_{CE}=-10V_{dc}$, $I_C=-1.0mA_{dc}$, $f=1.0KHz$	1.0	--	15	kΩ
Voltage Feedback Ratio	h_{re}	$V_{CE}=-10V_{dc}$, $I_C=-1.0mA_{dc}$, $f=1.0KHz$	0.5	--	8.0	$\times 10^{-4}$
Small-Signal Current Gain	h_{fe}	$V_{CE}=-10V_{dc}$, $I_C=-1.0mA_{dc}$, $f=1.0KHz$	100	--	500	
Output Admittance	$*h_{oe}$	$V_{CE}=-10V_{dc}$, $I_C=-1.0mA_{dc}$, $f=1.0KHz$	1.0	--	100	μmhos
Delay Time	t_d	$V_{CC}=-30V_{dc}$, $V_{BE}=-2.0V_{dc}$, $I_C=-150mA_{dc}$, $I_{B1}=-15mA_{dc}$	--	--	15	nS
Rise Time	t_r		--	--	20	
Storage Time	t_s	$V_{CC}=-30V_{dc}$, $I_C=-150mA_{dc}$, $I_{B1}=I_{B2}=-15mA_{dc}$	--	--	225	nS
Fall Time	t_f		--	--	30	

- FR-5=1.0x0.75x0.062in.
- Alumina=0.4x0.3x0.024in, 99.5% alumina.
- Pulse Width $\leq 300\mu S$; Duty Cycle $\leq 2.0\%$.

CDS4403-ME

SWITCHING TRANSISTOR

Typical Characteristics



Note: Specifications are subject to change without notice. For more detail and update, please visit our website.