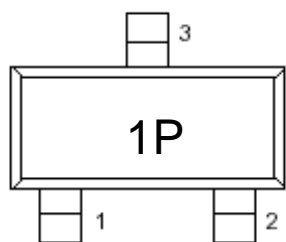


SWITCHING TRANSISTOR

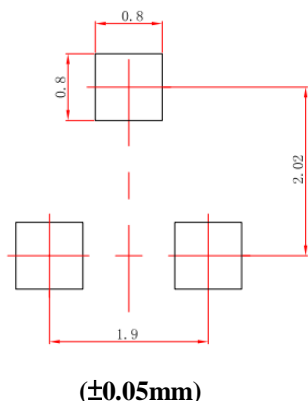
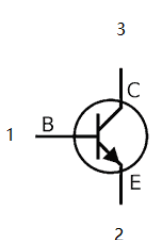
Marking:1P

Suggested Layout

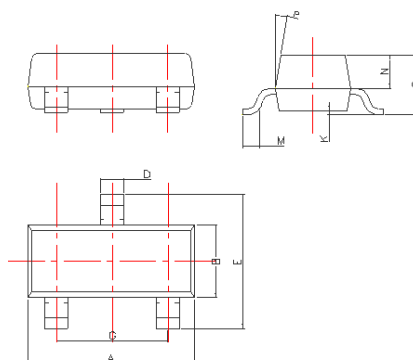
SOT-23



Top view



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°

MAXIMUM RATINGS (Ta=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	40	Vdc
Collector-Base Voltage	V_{CBO}	75	Vdc
Emitter-Base Voltage	V_{EBO}	6	Vdc
Collector Current - Continuous	I_C	600	mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (1) (Ta=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) Ta=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

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

Characteristic	Symbol	Test Condition	Min	Type	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=60Vdc$	--	--	0.01	µAdc
		$V_{CB}=60Vdc$, $I_E=0$, $T_A=125°C$	--	--	10	
Emitter-Cutoff Current	I_{EBO}	$V_{EB}=3.0Vdc$, $I_C=0$	--	--	100	nAdc

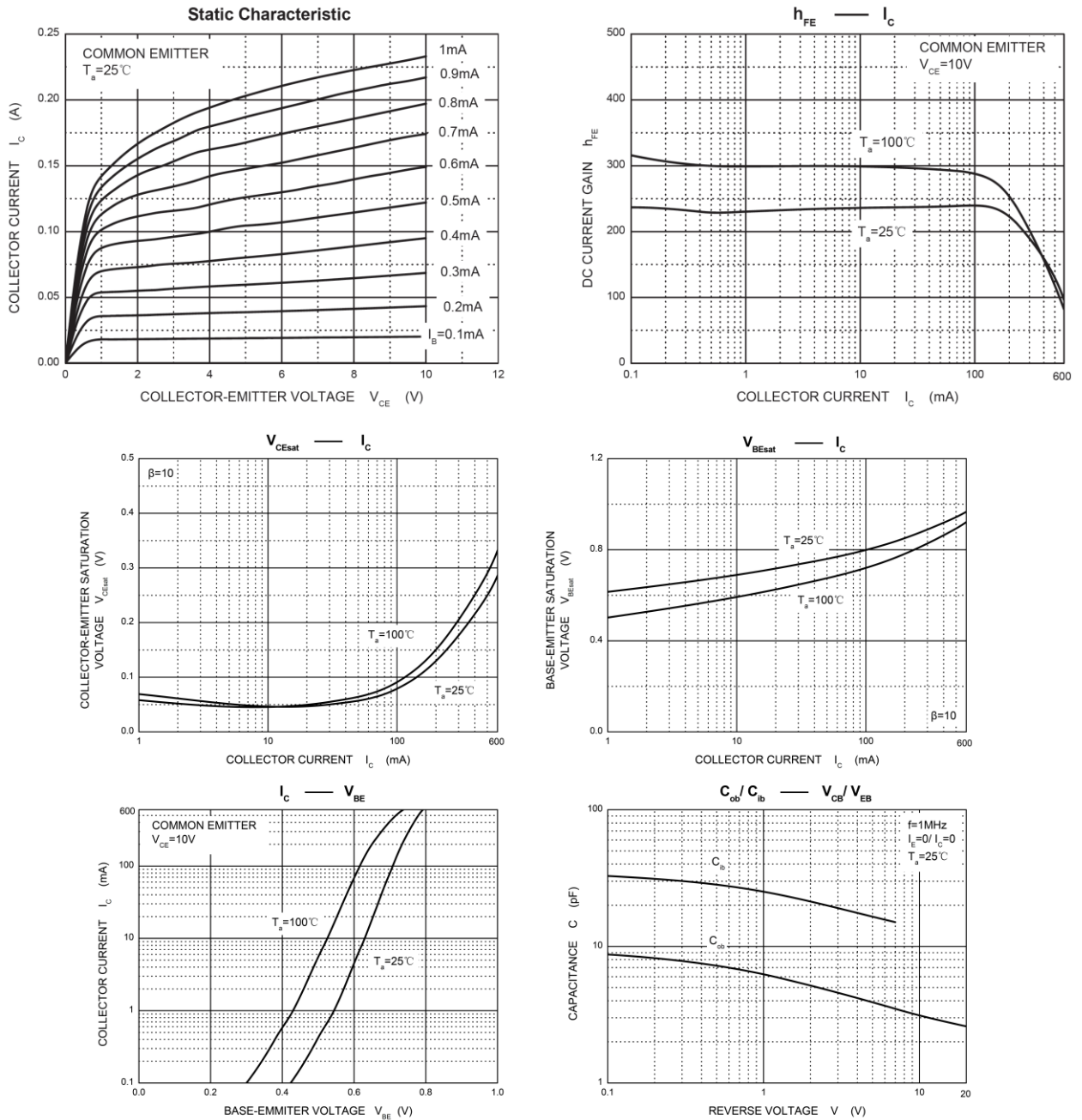
Kingtronics®**CDS2222A-ME**

Collector Cutoff Current	I_{CEX}	$V_{CE}=60V_{dc}$, $I_{EB(off)}=3.0 V_{dc}$	--	--	10	nAdc
Base Cutoff Current	I_{BEX}	$V_{CE}=60V_{dc}$, $V_{EB}=3.0 V_{dc}$	--	--	20	nAdc
Collector-Emitter Breakdown Voltage(3)	$V_{(BR)CEO}$	$I_C=10mAdc$, $I_B=0$	40	--		Vdc
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu Adc$, $I_E=0$	75	--		Vdc
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu Adc$, $I_C=0$	6	--	--	Vdc
DC Current Gain	h_{FE}	$I_C=0.1mAdc$, $V_{CE}=10V_{dc}$	35	--	--	—
		$I_C=1mAdc$, $V_{CE}=10V_{dc}$	50	--	--	
		$I_C=10mAdc$, $V_{CE}=10V_{dc}$	75		--	
		$I_C=1mAdc$, $V_{CE}=10V_{dc}$ $T_A=-55^{\circ}C$	35	--	--	
		$I_C=150mAdc$, $V_{CE}=10V_{dc}$	100	--	300	
		$I_C=500mAdc$, $V_{CE}=10V_{dc}$	40	--	--	
Collector-Emitter Saturation Voltage(3)	$V_{CE(sat)}$	$I_C=150mAdc$, $I_B=15mAdc$	--	--	0.3	Vdc
		$I_C=500mAdc$, $I_B=50mAdc$			1.0	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=150mAdc$, $I_B=15mAdc$	0.6	--	1.2	Vdc
		$I_C=500mAdc$, $I_B=50mAdc$	--	--	2.0	
Current-Gain-Bandwidth Product	f_T	$I_C=10mAdc$, $V_{CE}=20V_{dc}$, $f=100 MHz$	300	--	--	MHz
Output Capacitance	C_{obo}	$V_{CB}=10V_{dc}$, $I_E=0, f=1.0MHz$	--	--	8.0	pF
INput Capacitance	C_{ibo}	$V_{EB}=0.5V_{dc}$, $I_C=0, f=1.0MHz$	--	--	25	pF
Delay Time	t_d	$V_{CC}=30V_{dc}, V_{BE}=-0.5V_{dc}$, $I_C=150mAdc, I_{B1}=15mAdc$	--	--	10	nS
Rise Time	t_r		--	--	25	
Storage Time	t_s	$V_{CC}=30V_{dc}, I_C=150mAdc$, $I_{B1}=I_{B2}=15mAdc$	--	--	225	nS
Fall Time	t_f		--	--	60	

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

Kingtronics® International CompanyWebsite: www.kingtronics.com Email: info@kingtronics.com Tel: (852) 8106 7033 Fax: (852) 8106 7099

Typical Performance Characteristics



Note: Specifications are subject to change without notice.