TECH PUBLIC
台舟电子

MMDT2222A

NPN+NPN Plastic-Encapsulate Transistors

www.sot23.com.tw

Features

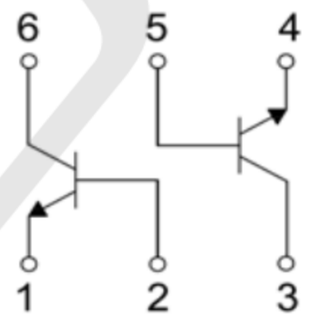
- Complementary PNP Type available TPMMDT2907A

Ordering Information

- Shipping Qty:3000/7inch Tape& Reel

SOT363

Circuit Diagram



Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	75	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	600	mA
P_C	Collector Power Dissipation	200	mW
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

Electrical Characteristics (TA=25°C unless otherwise specified)

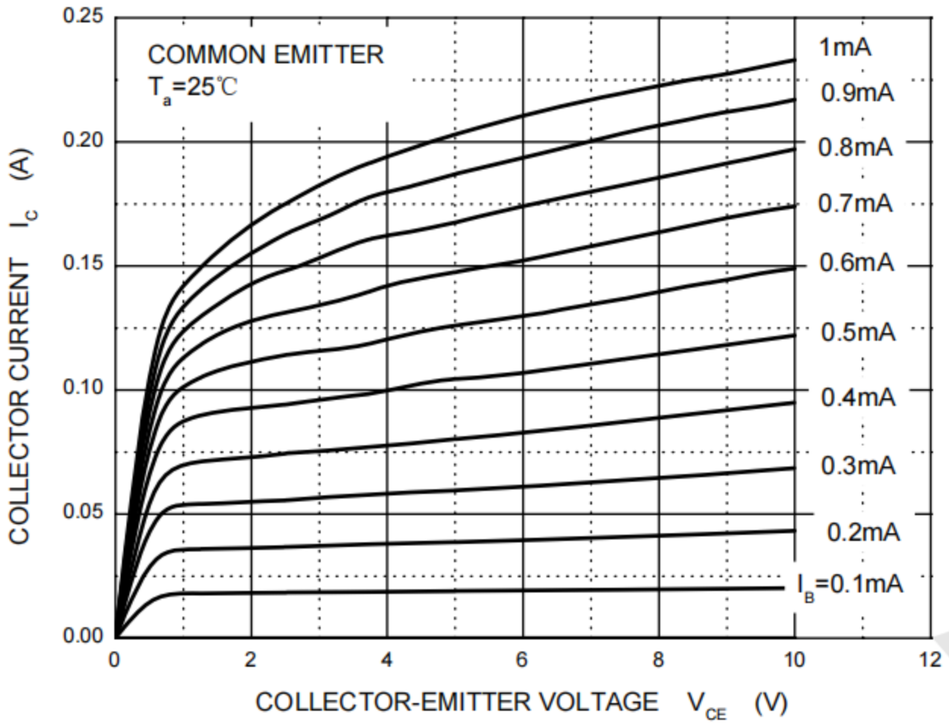
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= 10μA, I_E=0	75		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= 10mA, I_B=0	40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA.I_C=0	6		V
Collector cut-off current	I_{CBO}	V_{CB}= 60V, I_E=0		10	nA
Collector cut-off current	I_{CEX}	V_{CE}=60V,$V_{EB(off)}$=3V		10	nA
Emitter cut-off current	I_{EBO}	V_{EB}= 3 V, I_C=0		10	nA
DC current gain	$h_{FE(1)}$	V_{CE}=10V, I_C= 0.1mA	35		
	$h_{FE(2)}$	V_{CE}=10V, I_C= 1mA	50		
	$h_{FE(3)}$	V_{CE}=10V, I_C= 10mA	75		
	$h_{FE(4)}$	V_{CE}=10V, I_C= 150mA	100	300	
	$h_{FE(5)}$	V_{CE}=10V, I_C= 500mA	40		
	$h_{FE(6)}$	V_{CE}=1V, I_C= 150mA	35		
Collector-emitter saturation voltage	$V_{CE(sat)1}$	I_C=150mA, I_B= 15mA		0.3	V
	$V_{CE(sat)2}$	I_C=500mA, I_B= 50mA		1	V
Base-emitter saturation voltage	$V_{BE(sat)1}$	I_C=150mA, I_B=15mA	0.6	1.2	V
	$V_{BE(sat)2}$	I_C=500mA, I_B= 50mA		2	V
Transition frequency	f_T	V_{CE}=20V, I_C= 20mA, f=100MHz	300		MHz
Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0,f=1MHz		8	pF
Input Capacitance	C_{ib}	V_{EB}=0.5V,I_C= 0,f=1MHz		25	pF
Noise Figure	NF	V_{CE}=10V, I_C=100μA, f=1KHz,Rs=1KΩ		4	dB

Switching characteristics

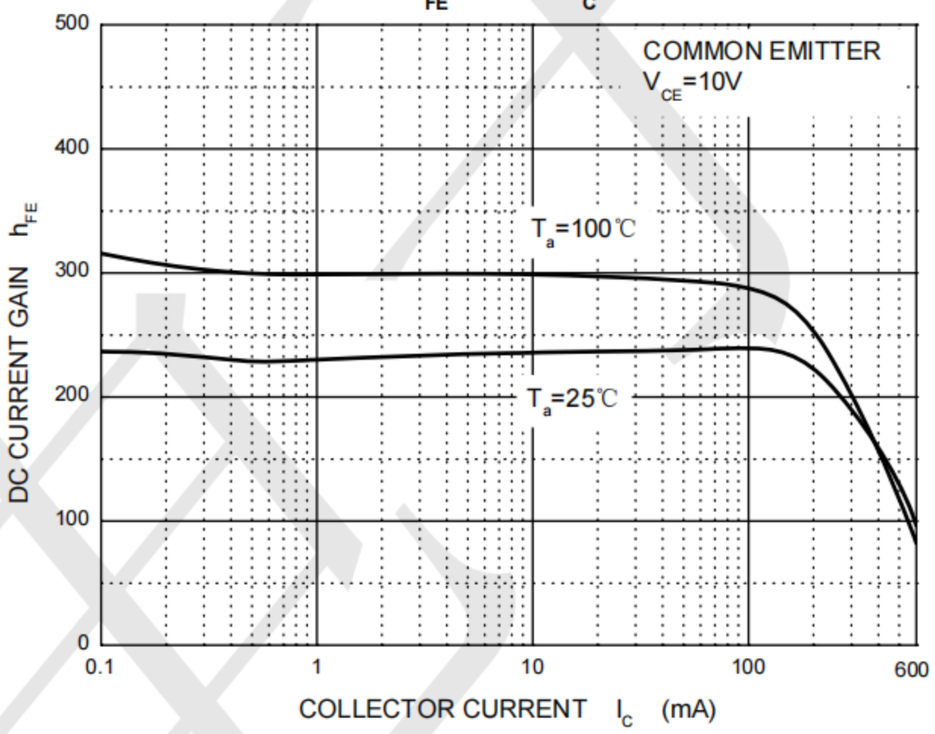
Parameter	Symbol	Test conditions	Min	Max	Unit
Delay time	t_d	V_{CC}=30V, I_C=150mA, $V_{BE(off)}$=0.5V,I_{B1}=15mA		10	ns
Rise time	t_r			25	ns
Storage time	t_S	V_{CC}=30V, I_C=150mA, I_{B1}= -I_{B2}= 15mA		225	ns
Fall time	t_f			60	ns

Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

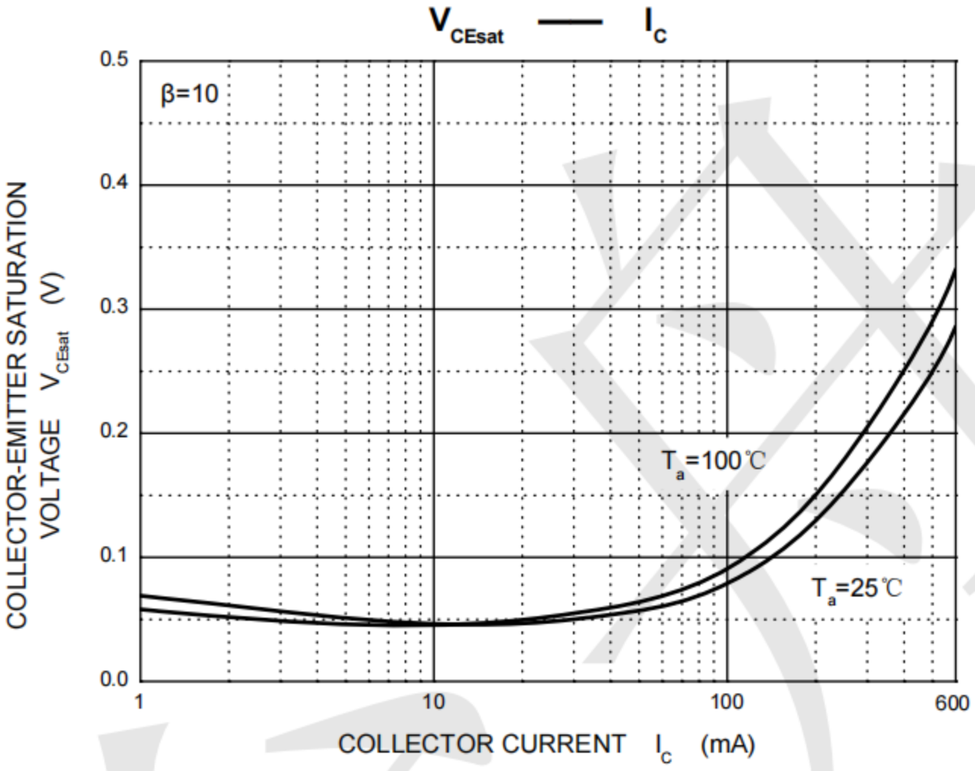
Static Characteristic



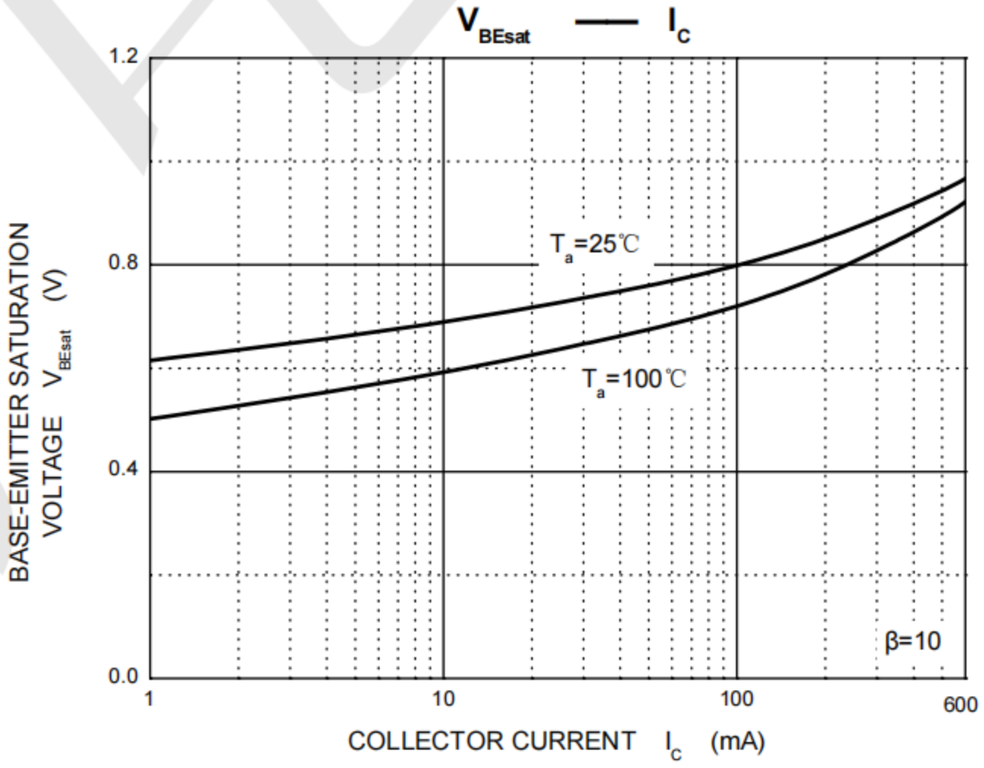
h_{FE} — I_C



V_{CEsat} — I_C

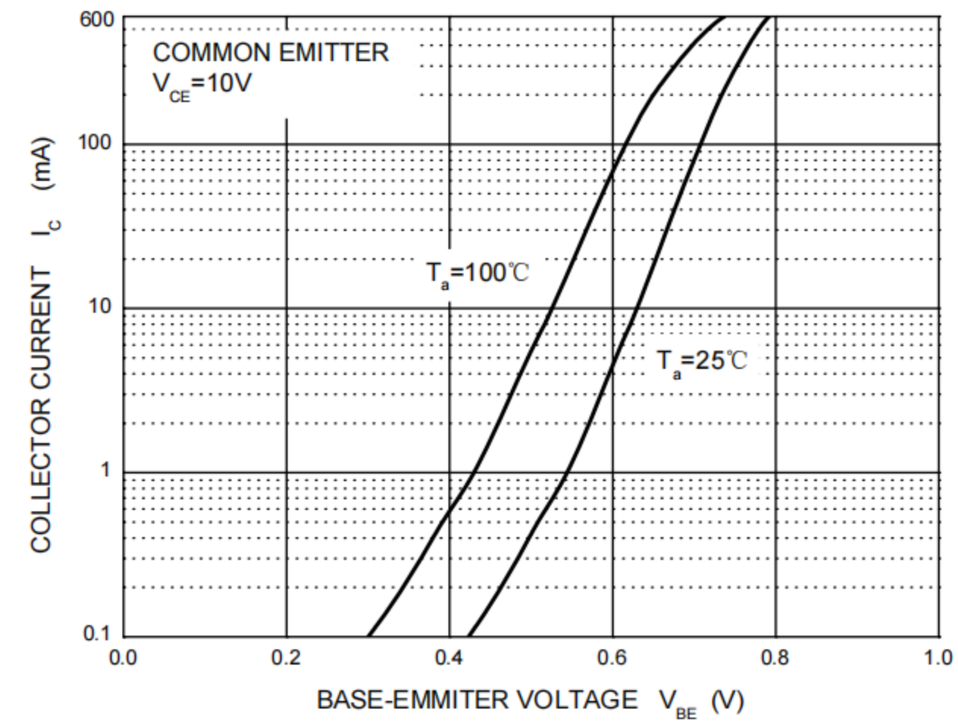


V_{BEsat} — I_C

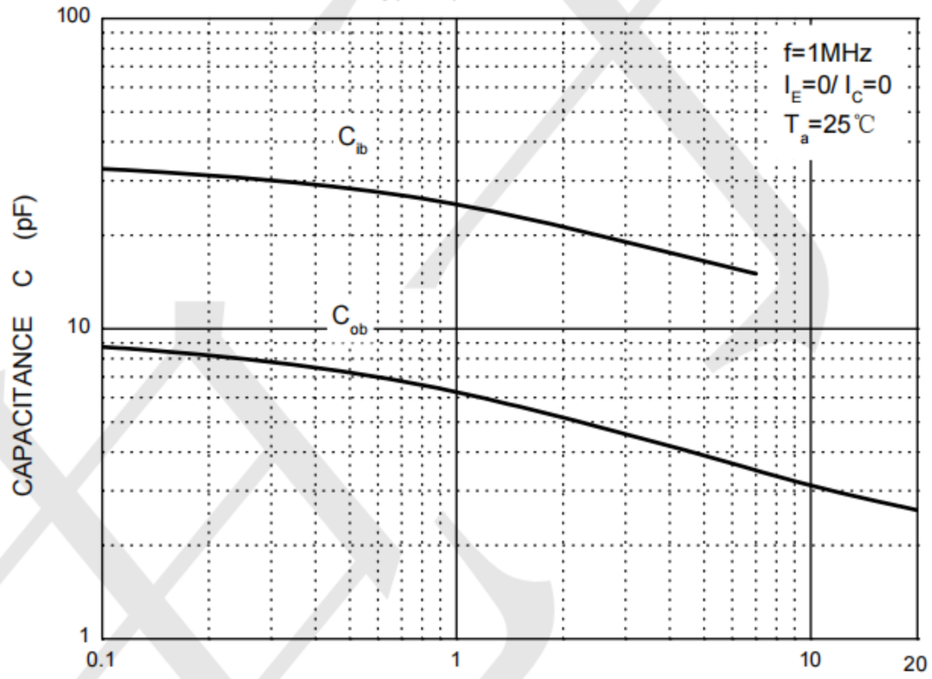


Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

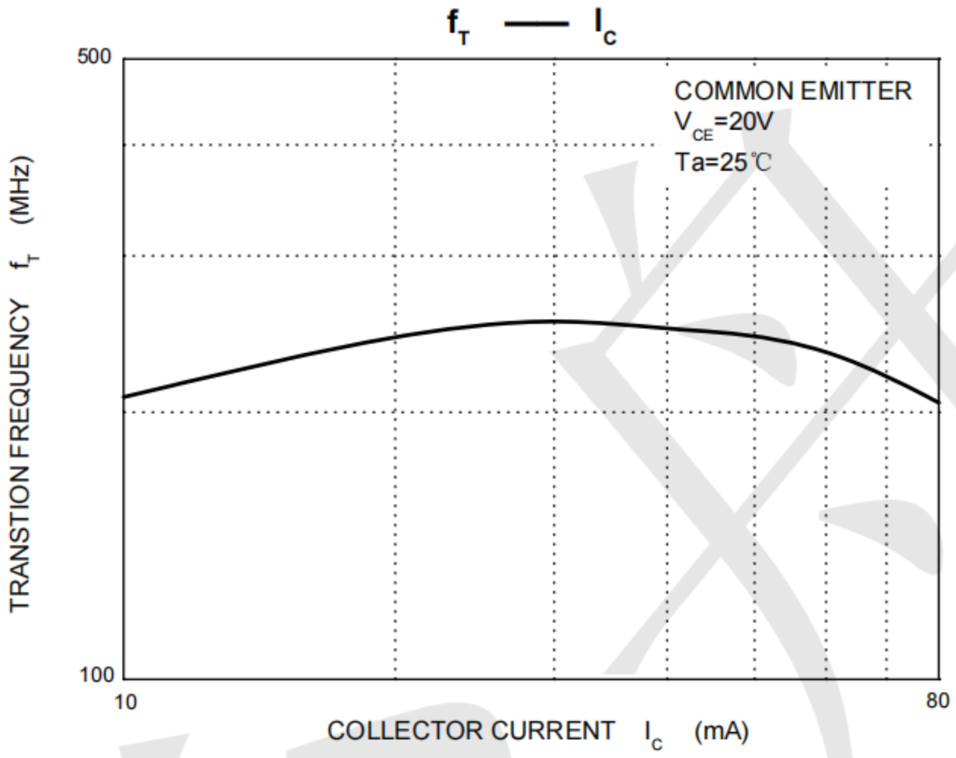
I_C — V_{BE}



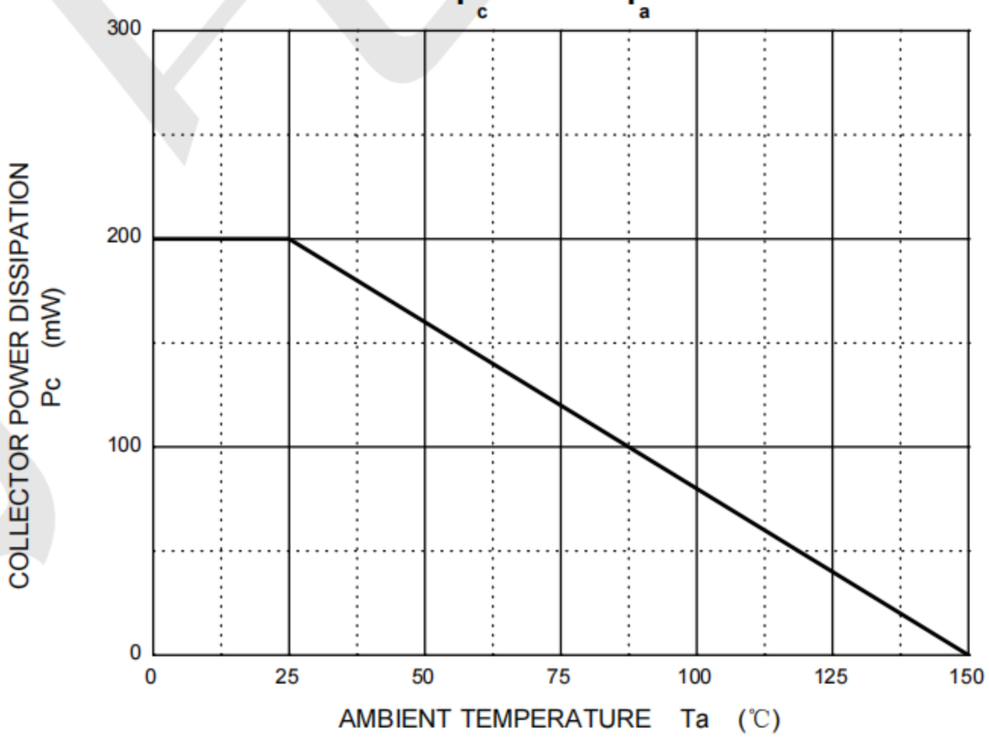
C_{ob} / C_{ib} — V_{CB} / V_{EB}



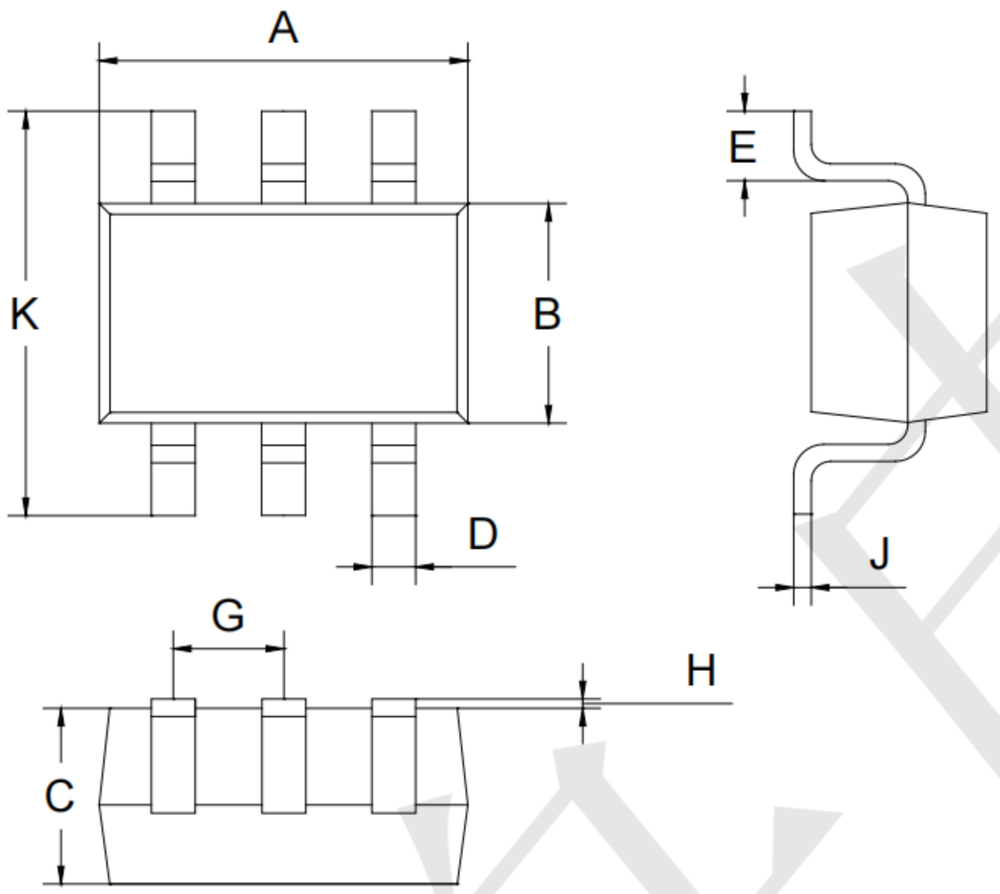
f_T — I_C



P_c — T_a



Outline Drawing - SOT363 (unit: mm)



SOT-363		
Dim	Min	Max
A	2.00	2.20
B	1.15	1.35
C	0.85	1.05
D	0.15	0.35
E	0.25	0.40
G	0.60	0.70
H	0.02	0.10
J	0.05	0.15
K	2.20	2.40

Mounting Pad Layout-SOT363 (unit: mm)