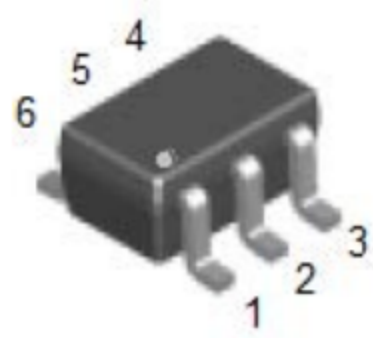


## Features

- Epitaxial planar die construction
- Complimentary to TPMMDT3906C6
- Ultra-small surface mount package

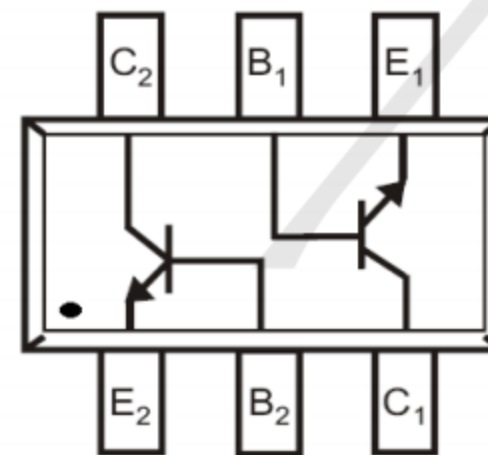
## Ordering Information

- Case: SOT363
- Shipping Qty:3000/7inch Tape& Reel



SOT363

Marking:K6N



## Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	$V_{CBO}$	60	V
Collector-Emitter Breakdown Voltage	$V_{CEO}$	40	V
Emitter-Base Breakdown Voltage	$V_{EBO}$	6	V
Continuous Collector Current	$I_C$	0.2	A

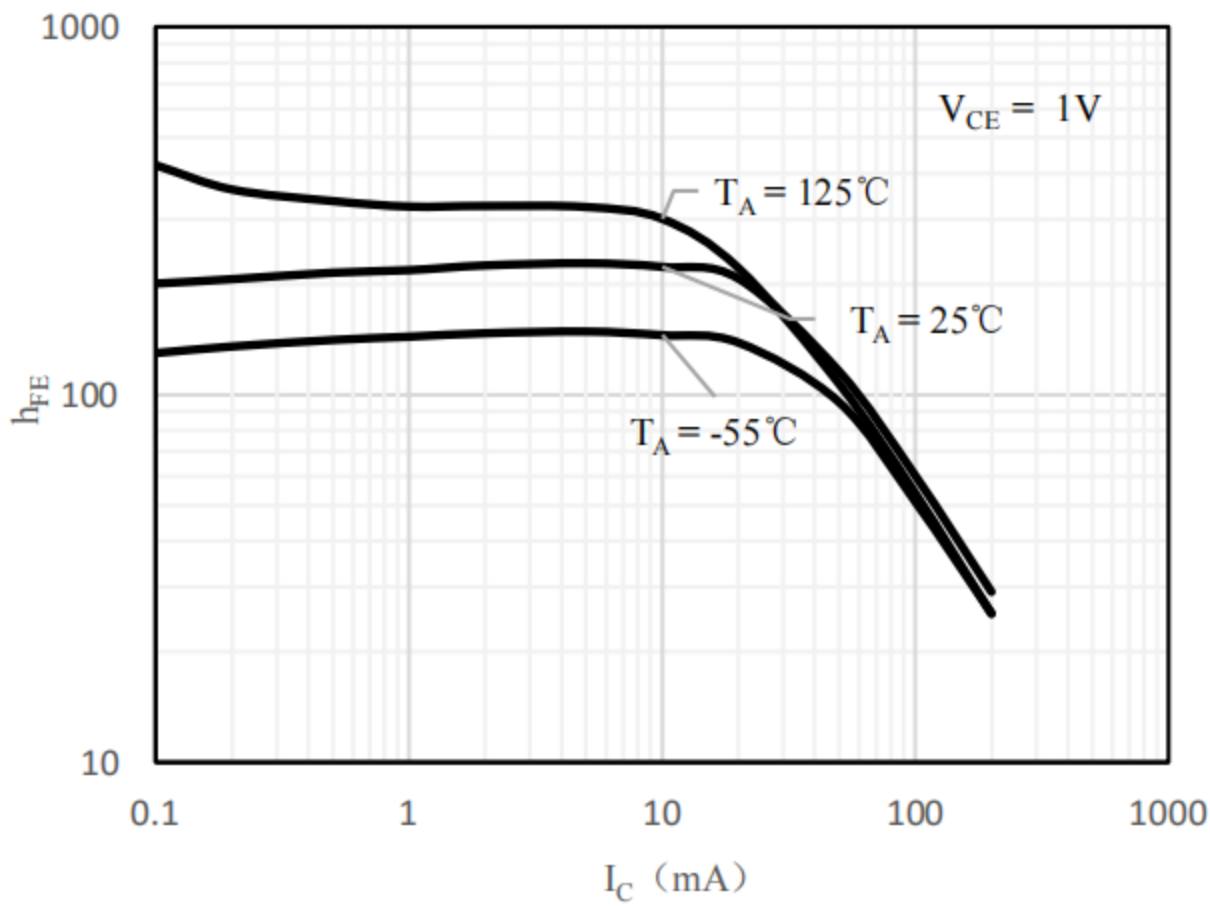
## Thermal Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Power Dissipation	$P_D$	200	mW
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	625	$^\circ\text{C/W}$
Operating junction Temperature	$T_J$	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

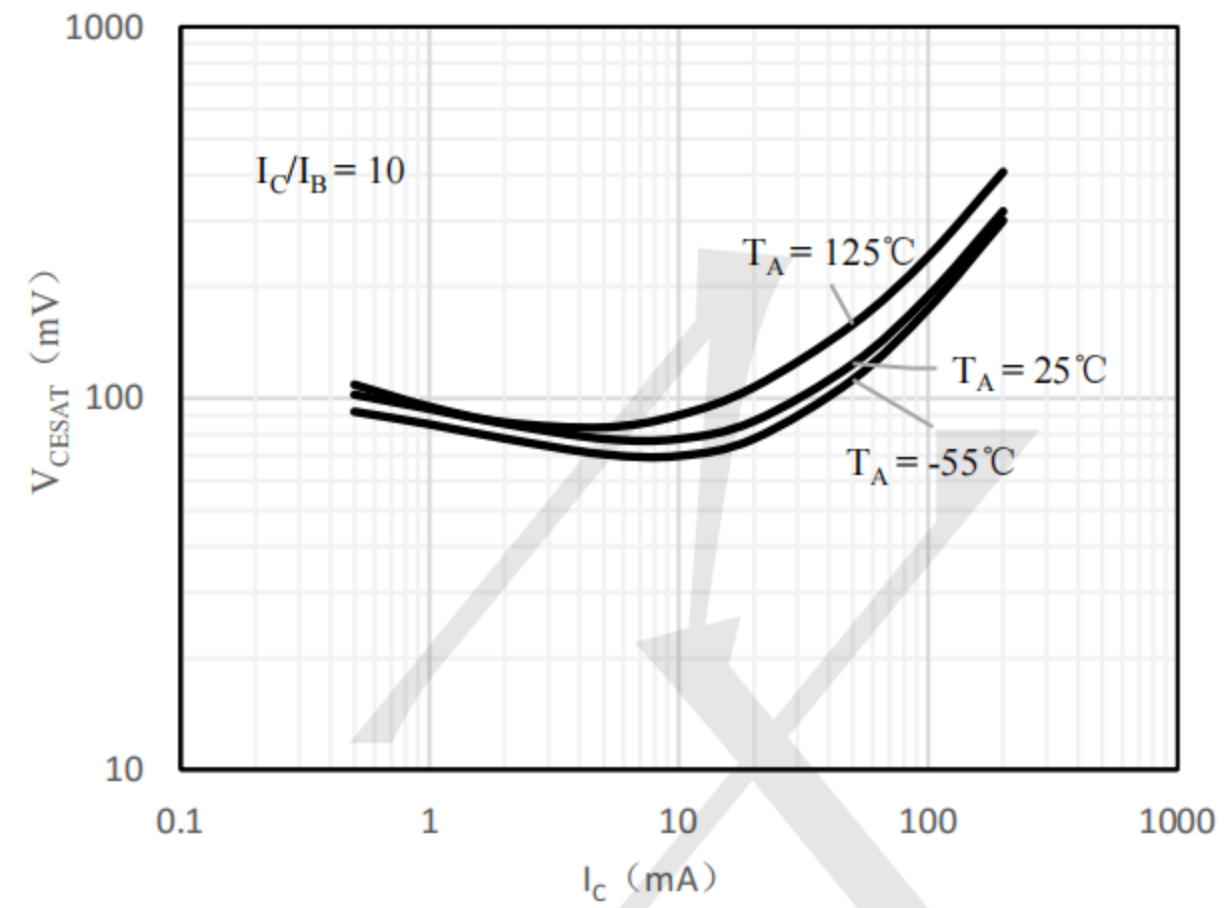
**Electrical Characteristics** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	60	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 100\mu\text{A}, I_B = 0$	40	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	6	-	-	V
Collector Cut-off Current	$I_{CEX}$	$V_{CE} = 30\text{V}, V_{EB(OFF)} = 3\text{V}$	-	-	50	nA
Base Cut-off Current	$I_{BL}$	$V_{CE} = 30\text{V}, V_{EB(OFF)} = 3\text{V}$	-	-	50	nA
DC Current Gain	$h_{FE}$	$V_{CE} = 1\text{V}, I_C = 0.1\text{mA}$	40	-	-	-
		$V_{CE} = 1\text{V}, I_C = 1\text{mA}$	70	-	-	-
		$V_{CE} = 1\text{V}, I_C = 10\text{mA}$	100	-	300	-
		$V_{CE} = 1\text{V}, I_C = 50\text{mA}$	60	-	-	-
		$V_{CE} = 1\text{V}, I_C = 100\text{mA}$	30	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$	-	-	0.2	V
		$I_C = 50\text{mA}, I_B = 5\text{mA}$	-	-	0.3	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$	0.65	-	0.85	V
		$I_C = 50\text{mA}, I_B = 5\text{mA}$	-	-	0.95	V
Transition Frequency	$f_T$	$I_C = 10\text{mA}, V_{CE} = 20\text{V}$	300	-	-	MHz
Collector Output Capacitance	$C_{OBO}$	$V_{CB} = 5\text{V}, I_E = 0, f = 1\text{MHz}$	-	-	4	pF
Input Capacitance	$C_{IBO}$	$V_{EB} = 0.5\text{V}, I_C = 0, f = 1\text{MHz}$	-	-	8	pF
Noise Figure	$N_F$	$V_{CE} = 5\text{V}, I_C = 100\mu\text{A}, R_s = 1\text{k}\Omega$ $f = 1\text{kHz}$	-	-	5	dB
Delay Time	$t_d$	$V_{CC} = 3\text{V}, I_C = 10\text{mA}$	-	-	35	ns
Rise Time	$t_r$	$V_{BE(OFF)} = -0.5\text{V}, I_{B1} = 1\text{mA}$	-	-	35	ns
Storage Time	$t_s$	$V_{CC} = 3\text{V}, I_C = 10\text{mA}$	-	-	200	ns
Fall Time	$t_f$	$I_{B1} = I_{B2} = 1\text{mA}$	-	-	50	ns

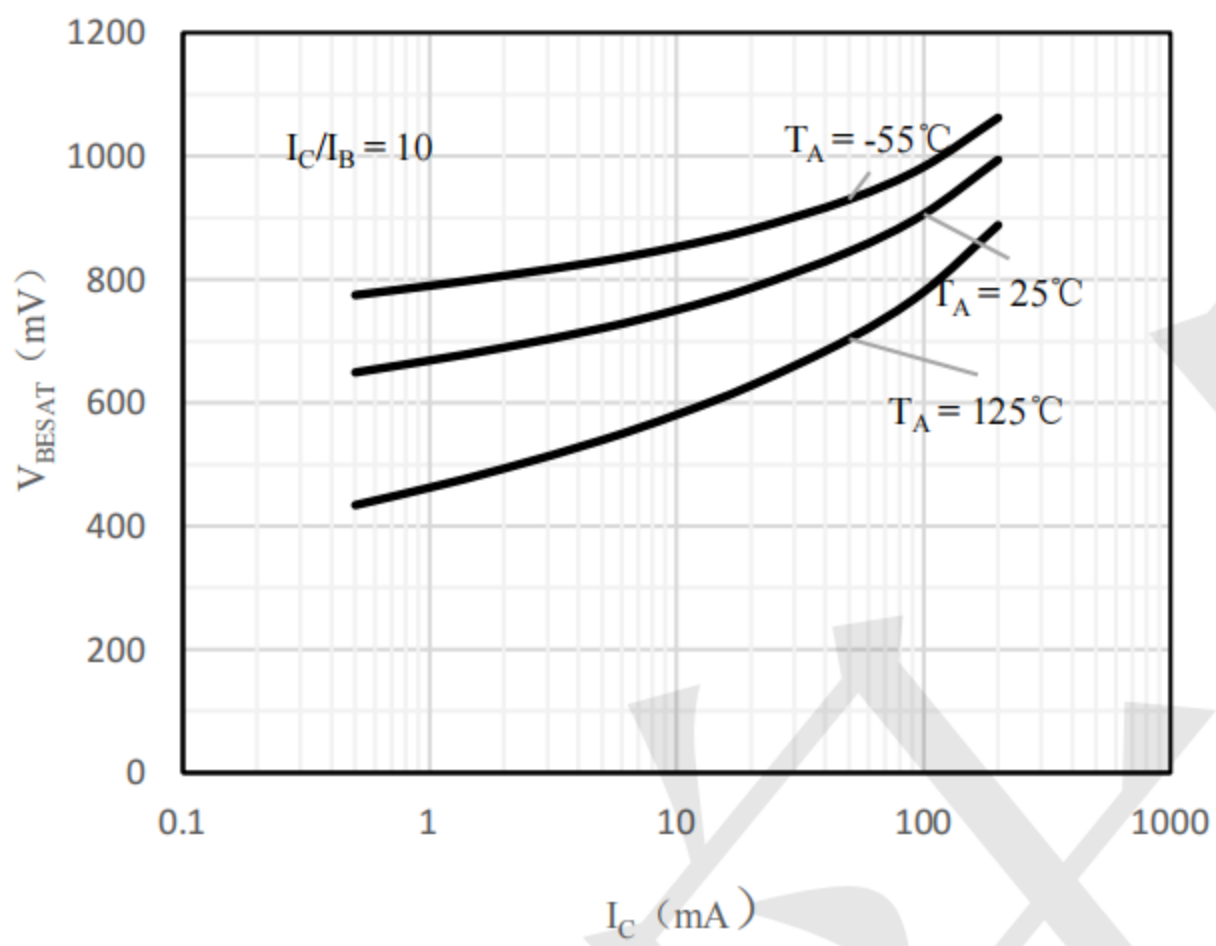
**Typical Electrical Characteristic Curves**



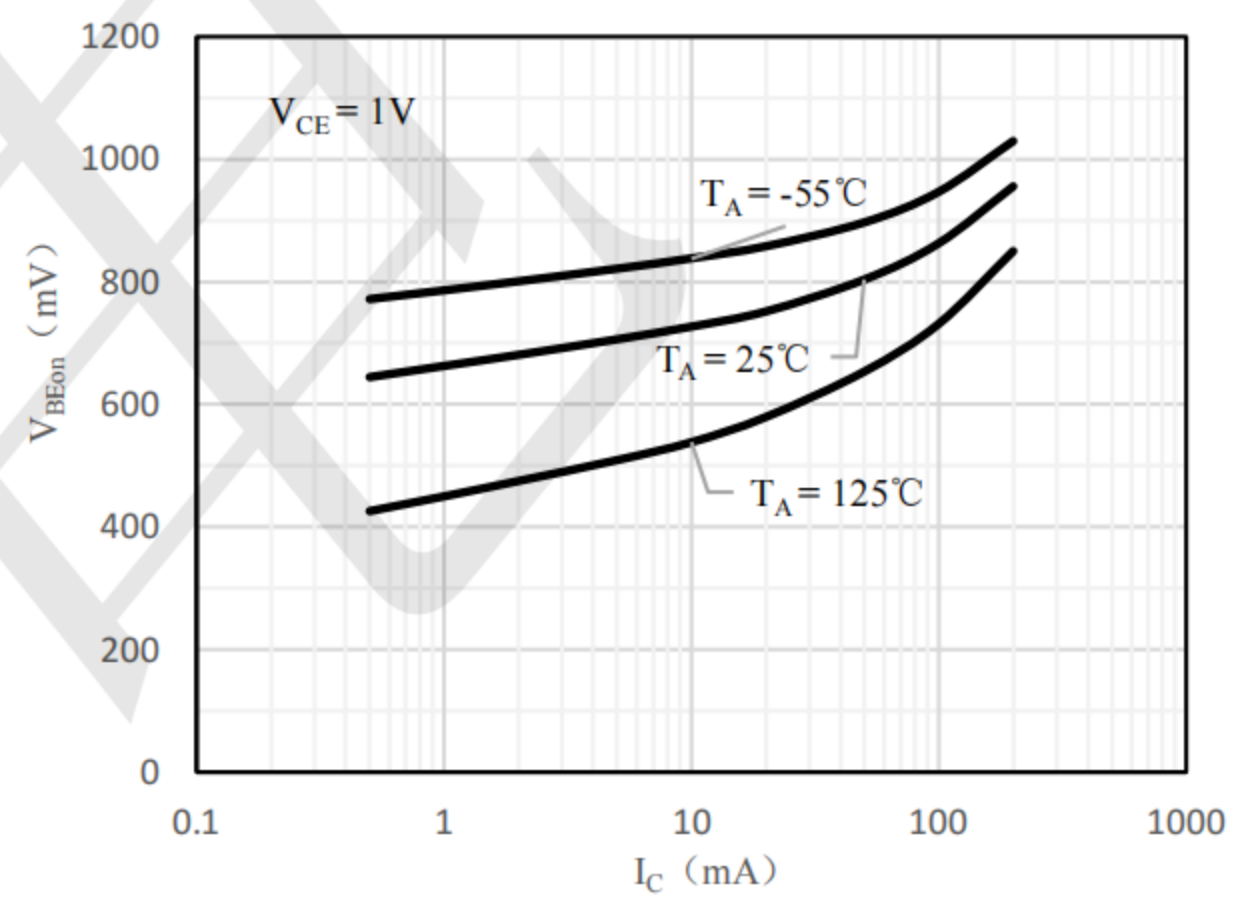
**Fig 1  $h_{FE}$  vs.  $I_C$**



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

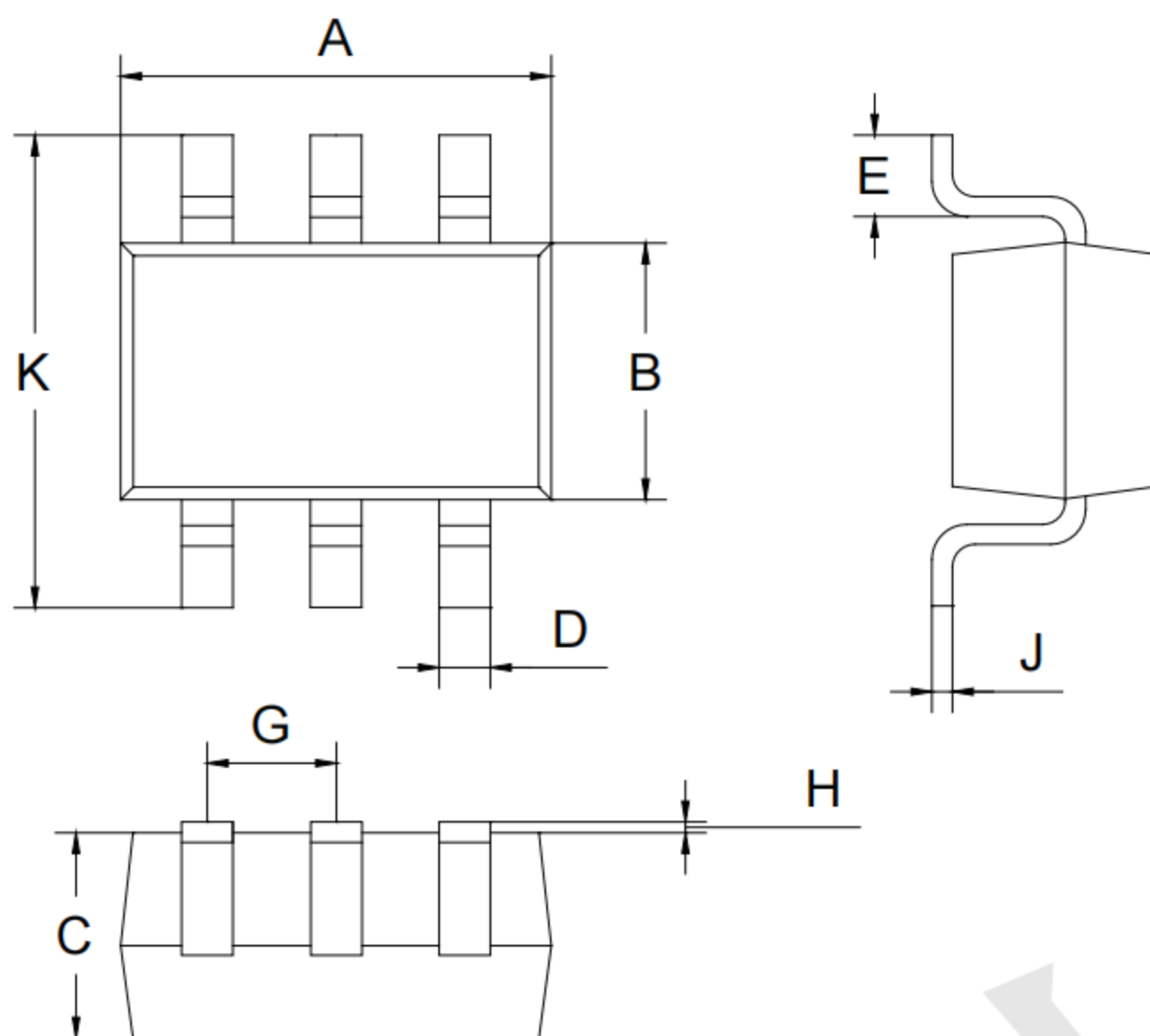


**Fig 3  $V_{BE(sat)}$  vs.  $I_C$**



**Fig 4  $V_{BE(on)}$  vs.  $I_C$**

**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)**

