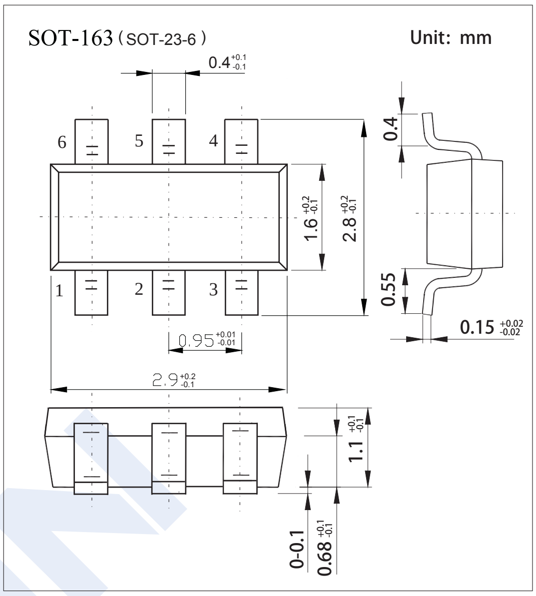
PNP/PNP Transistor

2KA7032DV

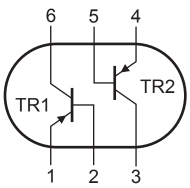


■ Features

- Low collector-emitter saturation voltage V_{CEsat}
- High collector current capability I_C and I_{CM}
- High collector current gain (h_{FE}) at high I_C
- High efficiency leading to reduced heat generation
- Reduced printed-circuit board area requirements.

■ Pinning information

1, 4	emitterTR1; TR2
2, 5	baseTR1; TR2
6, 3	collectorTR1; TR2



■ Absolute Maximum Ratings

Parameter		Symbol	Rating	Unit
Collector - Base Voltage		V_{CBO}	-80	V
Collector - Emitter Voltage		V_{CEO}	-60	
Emitter - Base Voltage		V_{EBO}	-5	
Collector Current	*1	I_C	-0.77	A
	*2		-0.9	
	*3		-1	
Peak Collector Current (single peak)		I_{CM}	-2	
Base Current		I_B	-0.3	
Peak Base Current		I_{BM}	-1	
Total Power Dissipation（Ta=25℃）	*1	P_{tot}	290	mW
	*2		370	
	*3		450	
Per Devices Total Power Dissipation（Ta=25℃）	*1		420	
	*2		560	
	*3		700	
Thermal Resistance from Junction to Ambient	*1	$R_{th(j-a)}$	431	℃/W
	*2		338	
	*3		278	
Junction Temperature		T_J	150	℃
Storage Temperature range		T_{stg}	-55 to +150	

Note:

1. Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.
2. Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 1 cm^2.
3. Device mounted on a ceramic PCB, Al_2O_3, standard footprint.

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■ Electrical Characteristics (T_a = 25℃ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= -100 μA， I_E= 0	-80			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= -1 mA， I_B= 0	-60			
Emitter - base breakdown voltage	V_{EBO}	I_E= -100 μA， I_C= 0	-5			
Collector-base cut-off current	I_{CBO}	V_{CB}= -60 V , I_E= 0			-100	nA
		V_{CB}= -60 V , I_E= 0, T_j=150℃			-50	μA
Collector- emitter cut-off current	I_{CES}	V_{CE}= -60 V , V_{BE}= 0V			-100	nA
Emitter cut-off current	I_{EBO}	V_{EB}= -5V , I_C=0			-100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-100 mA, I_B=-1 mA			-165	mV
		I_C=-500 mA, I_B=-50 mA			-175	
		I_C=-1 A, I_B=-100 mA			-330	
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=-1 A, I_B=-50 mA			-1.1	V
Collector-emitter saturation resistance	$R_{CE(sat)}$	I_C=-1 A, I_B=-100 mA			330	mΩ
Base - emitter turn-on voltage	V_{BEon}	VCE= -5V, IC= -1A			-0.9	V
DC current gain	h_{FE}	V_{CE}= -5V, I_C= -1mA	200		800	
		V_{CE}= -5V, I_C= -500mA	150			
		V_{CE}= -5V, I_C= -1A	100			
Delay time	t_d	I_C = -0.5 A; I_{Bon} = -25 mA; I_{Boff} = 25 mA		11		ns
Rise time	t_r			30		
Turn-on time	t_{on}			41		
Storage time	t_s			205		
Fall time	t_f			55		
Turn-off time	t_{off}			260		
Transition frequency	f_T	I_C=-50mA; V_{CE}=-10V; f=100MHz	150			MHz
Collector capacitance	C_c	V_{CB}=-10V; I_E=I_e=0; f=1MHz			15	pF

Note: 1. Pulse test: tp≤300μs; δ ≤0.02

■ Marking

Marking	K6S

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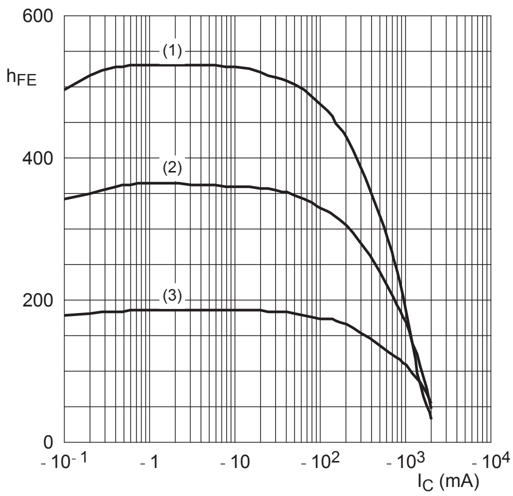
■ Typical Characterisitics



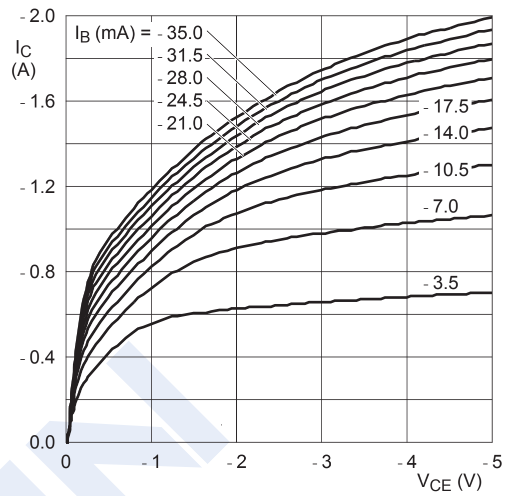
V_{CE} = - 5 V

(1) T_{amb} = 100 °C

(2) T_{amb} = 25 °C

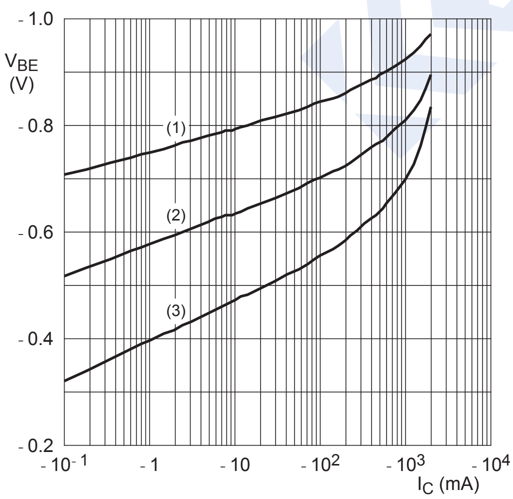
(3) T_{amb} = - 55 °C

Fig 1. DC current gain as a function of collector current; typical values



T_{amb} = 25 °C

Fig 2. Collector current as a function of collector-emitter voltage; typical values



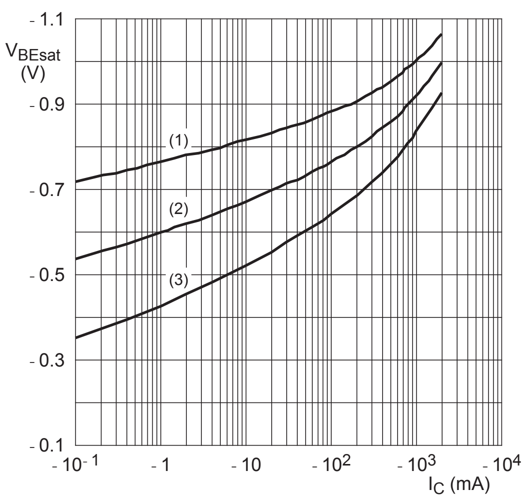
V_{CE} = - 5 V

(1) T_{amb} = - 55 °C

(2) T_{amb} = 25 °C

(3) T_{amb} = 100 °C

Fig 3. Base-emitter voltage as a function of collector current; typical values



I_C/I_B = 20

(1) T_{amb} = - 55 °C

(2) T_{amb} = 25 °C

(3) T_{amb} = 100 °C

Fig 4. Base-emitter saturation voltage as a function of collector current; typical values

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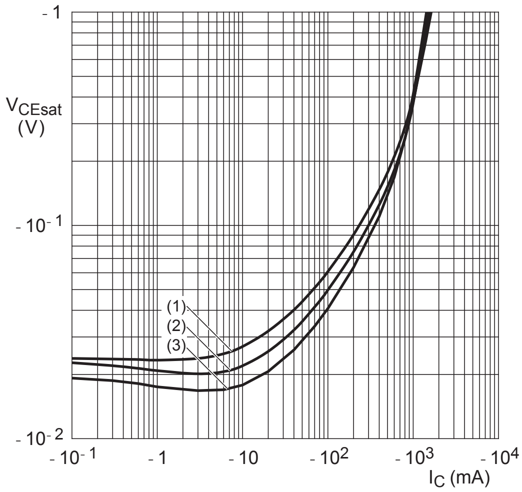


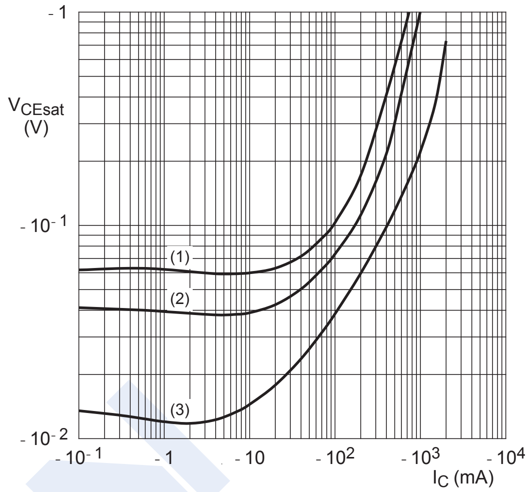
I_C/I_B = 20

(1) T_{amb} = 100 °C

(2) T_{amb} = 25 °C

(3) T_{amb} = - 55 °C

Fig 5. Collector-emitter saturation voltage as a function of collector current; typical values



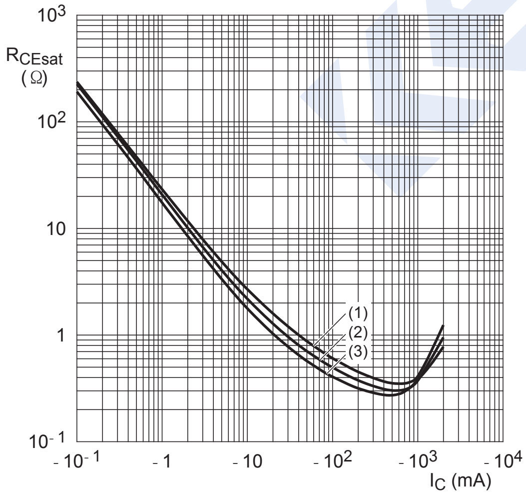
T_{amb} = 25 °C

(1) I_C/I_B = 100

(2) I_C/I_B = 50

(3) I_C/I_B = 10

Fig 6. Collector-emitter saturation voltage as a function of collector current; typical values



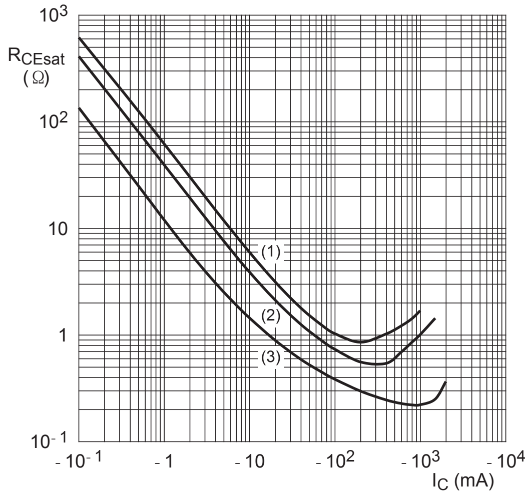
I_C/I_B = 20

(1) T_{amb} = 100 °C

(2) T_{amb} = 25 °C

(3) T_{amb} = - 55 °C

Fig 7. Collector-emitter saturation resistance as a function of collector current; typical values



T_{amb} = 25 °C

(1) I_C/I_B = 100

(2) I_C/I_B = 50

(3) I_C/I_B = 10

Fig 8. Collector-emitter saturation resistance as a function of collector current; typical values