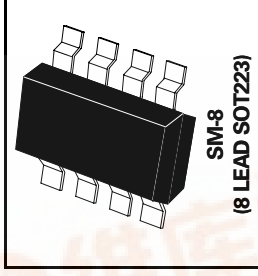
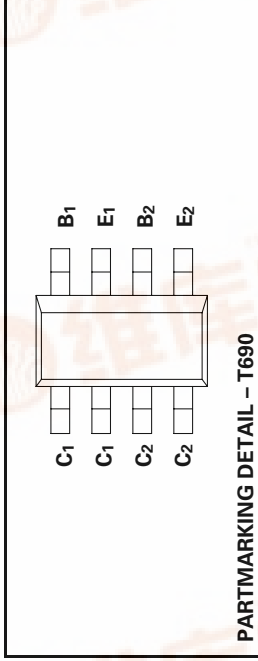


SM-8 DUAL NPN MEDIUM POWER HIGH GAIN TRANSISTORS

ISSUE 1 - NOVEMBER 1995

ZDT690



[查询ZDT690供应商](#)

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CB0}	45	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	5	V
Peak Pulse Current	I_{CM}	6	A
Continuous Collector Current	I_C	2	A
Operating and Storage Temperature Range	T_j, T_{stg}	-55 to +150	$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	VALUE	UNIT
Total Power Dissipation at $T_{amb} = 25^{\circ}\text{C}^*$ Any single die "on" Both die "on" equally	P_{tot}	2.25 2.75	W W
Derate above 25°C^* Any single die "on" Both die "on" equally		18 22	mW/ $^{\circ}\text{C}$ mW/ $^{\circ}\text{C}$
Thermal Resistance - Junction to Ambient* Any single die "on" Both die "on" equally		55.6 45.5	$^{\circ}\text{C}/\text{W}$ $^{\circ}\text{C}/\text{W}$

* The power which can be dissipated assuming the device is mounted in a typical manner on a PCB with copper equal to 2 inches square.

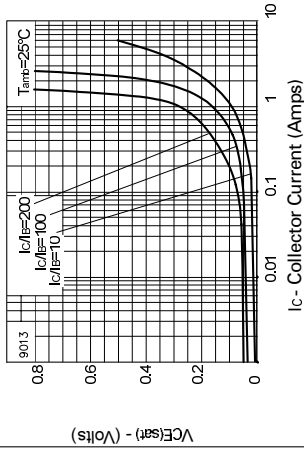
[捷多邦, 专业PCB打样工厂, 24小时加急出货](#)

TYPICAL CHARACTERISTICS

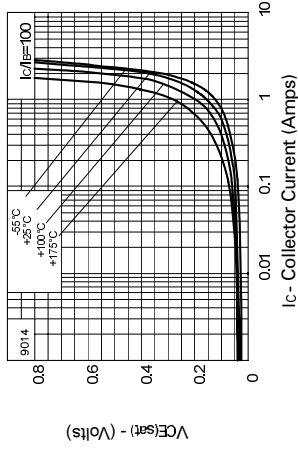
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	45			V	$I_C = 100\mu A$
Collector-Emmitter Breakdown Voltage	$V_{(BR)CEO}$	45			V	$I_C = 10mA^*$
Emmitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E = 100\mu A$
Collector Cutoff Current	I_{CBO}			0.1	μA	$V_{CB} = 35V$
Emmitter Cutoff Current	I_{EBO}			0.1	μA	$V_{EB} = 4V$
Collector-Emmitter Saturation Voltage	$V_{CE(sat)}$			0.1 0.5	V	$I_C = 0.1A, I_B = 0.5mA^*$ $I_C = 1A, I_B = 5mA^*$
Base-Emmitter Saturation Voltage	$V_{BE(sat)}$			0.9	V	$I_C = 1A, I_B = 10mA^*$
Base-Emmitter Turn-On Voltage	$V_{BE(on)}$			0.9	V	$I_C = 1A, V_{CE} = 2V^*$
Static Forward Current Transfer Ratio	h_{FE}	500 400 150				$I_C = 100mA, V_{CE} = 2V^*$ $I_C = 1A, V_{CE} = 2V^*$ $I_C = 2A, V_{CE} = 2V^*$
Transition Frequency	f_T	150			MHz	$I_C = 50mA, V_{CE} = 5V$ $f = 50MHz$
Input Capacitance	C_{ibo}		200		pF	$V_{EB} = 0.5V, f = 1MHz$
Output Capacitance	C_{obo}		16		pF	$V_{CB} = 10V, f = 1MHz$
Switching Times	t_{on} t_{off}		33 1300		ns	$I_C = 500mA, I_B = 50mA$ $I_B = 50mA, V_{CC} = 10V$

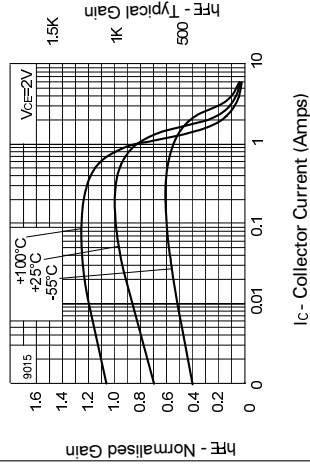
*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle \leq 2%



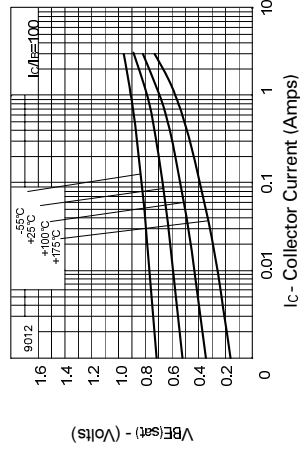
$V_{CE(sat)}$ v I_C



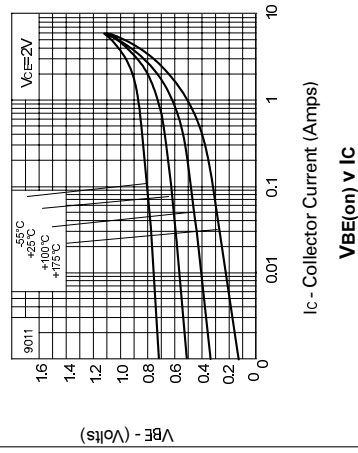
$V_{CE(sat)}$ v I_C



h_{FE} v I_C



$V_{BE(sat)}$ v I_C



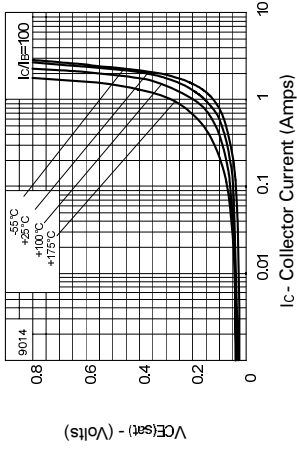
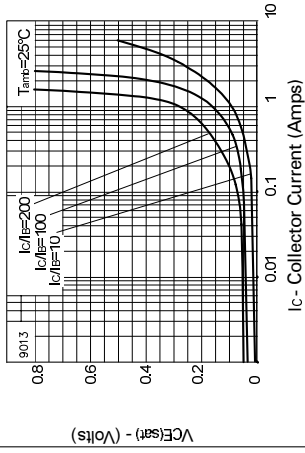
$V_{BE(on)}$ v I_C

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	V _{(BR)CBO}	45			V	I _C =100µA
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	45			V	I _C =10mA*
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	5			V	I _E =100µA
Collector Cutoff Current	I _{CBO}			0.1	µA	V _{CB} =35V
Emitter Cutoff Current	I _{EBO}			0.1	µA	V _{EB} =4V
Collector-Emitter Saturation Voltage	V _{CE(sat)}			0.1	V	I _C =0.1A, I _B =0.5mA*
				0.5	V	I _C =1A, I _B =5mA*
Base-Emitter Saturation Voltage	V _{BE(sat)}			0.9	V	I _C =1A, I _B =10mA*
Base-Emitter Turn-On Voltage	V _{BE(on)}			0.9	V	I _C =1A, V _{CE} =2V*
Static Forward Current Transfer Ratio	h _{FE}	500				I _C =100mA, V _{CE} =2V*
		400				I _C =1A, V _{CE} =2V*
		150				I _C =2A, V _{CE} =2V*
Transition Frequency	f _T	150			MHz	I _C =50mA, V _{CE} =5V f=50MHz
Input Capacitance	C _{ibo}		200		pF	V _{EB} =0.5V, f=1MHz
Output Capacitance	C _{obbo}		16		pF	V _{CB} =10V, f=1MHz
Switching Times	t _{on} t _{off}		33 1300		ns	I _C =500mA, I _{B1} =50mA I _{B2} =50mA, V _{CC} =10V

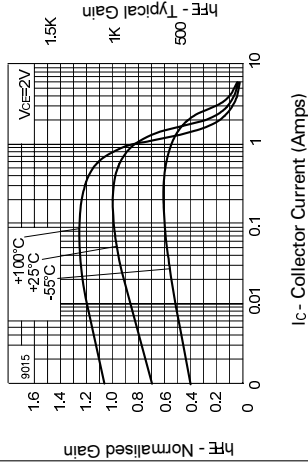
*Measured under pulsed conditions. Pulse width=300µs. Duty cycle ≤ 2%

TYPICAL CHARACTERISTICS



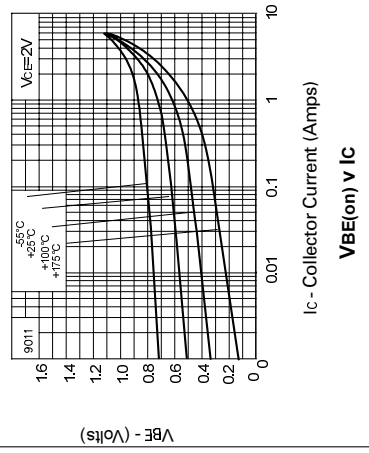
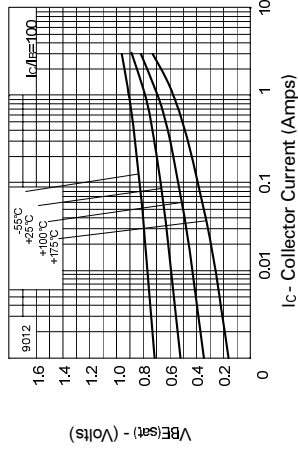
V_{CE(sat)} v I_C

V_{CE(sat)} v I_C



h_{FE} v I_C

V_{BE(sat)} v I_C



V_{BE(on)} v I_C