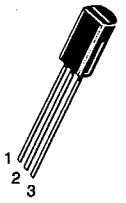
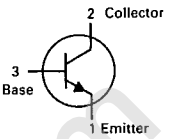
T-29-23

BDC05
BDC07

CASE 29-03, STYLE 14
TO-92 (TO-226AE)

2





HIGH VOLTAGE TRANSISTORS

NPN SILICON

Refer to MPSW42 for graphs.

MAXIMUM RATINGS

Rating	Symbol	BDC 05	BDC 07	Unit
Collector-Emitter Voltage	V_{CEO}	300	250	Vdc
Collector-Base Voltage	V_{CBO}	300	250	Vdc
Emitter-Base Voltage	V_{EBO}	5.0		Vdc
Collector Current – Continuous	I_C	500		mAdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	1 8.0		Watt mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	2.5 50		Watt mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−55 to +150		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	50	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JC}$	125	°C/W

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

Characteristic		Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (1) (I_C = 1 mAdc, I_B = 0)	BDC05 BDC07	$V_{(BR)CEO}$	300 250	—	Vdc
Collector-Base Breakdown Voltage (I_C = 100 μAdc, I_E = 0)	BDC05 BDC07	$V_{(BR)CBO}$	300 250	—	Vdc
Emitter-Base Breakdown Voltage (I_E = 100 μAdc, I_C = 0)	BDC05 BDC07	$V_{(BR)EBO}$	5.0 5.0	—	Vdc
Collector Cutoff Current (V_{CB} = 200 Vdc, I_E = 0)	BDC05 BDC07	I_{CBO}	—	0.01	μAdc
Emitter Cutoff Current (V_{BE} = 5.0 Vdc, I_C = 0)	BDC05 BDC07	I_{EBO}	—	10	μAdc
ON CHARACTERISTICS					
DC Current Gain (I_C = 25 mAdc, V_{CE} = 20 Vdc)	BDC05 BDC07	h_{FE}	40 50	— —	—
Collector-Emitter Saturation Voltage (I_C = 20 mAdc, I_B = 2.0 mAdc)		$V_{CE(sat)}$		2	Vdc
Base-Emitter Saturation Voltage (I_C = 20 mA, I_B = 2.0 mA)		$V_{BE(sat)}$		2.0	Vdc
DYNAMIC CHARACTERISTICS					
Current Gain–Bandwidth Product (I_C = 10 mAdc, V_{CE} = 10 Vdc, f = 50 MHz)		f_T	60	—	MHz
Collector-Base Capacitance (V_{CB} = 30 Vdc, I_E = 0, f = 1.0 MHz)		C_{re}		2.8	pF

(1) Pulse Test: Pulse Width ≦ 300 μs, Duty Cycle ≦ 2.0%.