



Micro Commercial Components

Micro Commercial Components  
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# MJD32C

## Silicon PNP epitaxial planer Transistors

### Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Case Material:Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 1
- Electrically similar to popular TIP32 Series
- Designed for general purpose amplifier and low speed switching applications.
- Maximum Thermal Resistance: 100°C/W Junction to Ambient

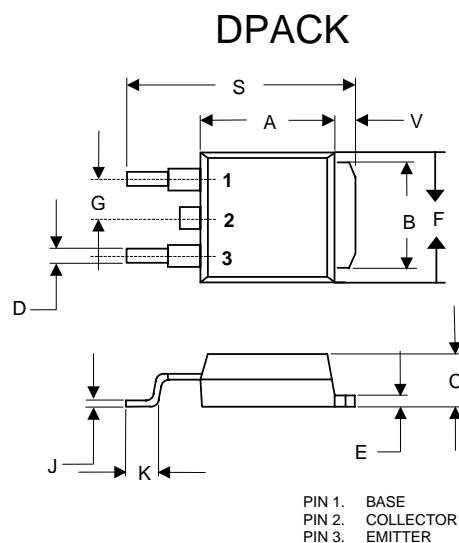
### Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Rating	Rating	Unit
V <sub>CEO</sub>	Collector-Emitter Voltage	-100	V
V <sub>CBO</sub>	Collector-Base Voltage	-100	V
V <sub>EBO</sub>	Emitter-Base Voltage	-5	V
I <sub>C</sub>	Collector Current-Continuous	-3	A
P <sub>C</sub>	Collector Dissipation	1.25	W
T <sub>J</sub>	Operating Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	-65 to +150	°C

### Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Typ	Max	Units
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage (I <sub>C</sub> =-30mA, I <sub>B</sub> =0)	-100	---	---	Vdc
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage (I <sub>C</sub> =-1mA, I <sub>E</sub> =0)	-100	---	---	Vdc
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage (I <sub>E</sub> =-1mA, I <sub>C</sub> =0)	-5	---	---	Vdc
I <sub>CEO</sub>	Collector Cutoff Current (V <sub>CE</sub> =-60Vdc, I <sub>B</sub> =0)	---	---	-50	uAdc
I <sub>CES</sub>	Collector Cutoff Current (V <sub>CE</sub> =-100Vdc, V <sub>EB</sub> =0)	---	---	-20	uAdc
I <sub>EBO</sub>	Emitter Cutoff Current (V <sub>EB</sub> =-5Vdc, I <sub>C</sub> =0)	---	---	-1	mAdc
h <sub>FE</sub>	DC Current Gain (I <sub>C</sub> =-1Adc, V <sub>CE</sub> =-4Vdc) (I <sub>C</sub> =-3Adc, V <sub>CE</sub> =-4Vdc)	25 10	---	---	
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage (I <sub>C</sub> =-3Adc, I <sub>B</sub> =-0.375Adc) (note 1)	---	---	-1.2	Vdc
V <sub>BE(on)</sub>	Base-Emitter Voltage (I <sub>C</sub> =-3Adc, V <sub>CE</sub> =-4Vdc) (note 1)	---	---	-1.8	Vdc
f <sub>T</sub>	Transition frequency (V <sub>CE</sub> =-10Vdc, I <sub>C</sub> =-0.5Adc, f <sub>T</sub> =1KHz)	3	---	---	MHz

Note: 1. Pulse Test: PW≤300μs, Duty Cycles≤2%



DIM	DIMENSIONS				NOTE
	INCHES		MM		
A	0.235	0.245	5.97	6.22	
B	0.205	0.215	5.21	5.46	
C	0.086	0.094	2.19	2.38	
D	0.025	0.035	0.64	0.89	
E	0.035	0.045	0.99	1.14	
F	0.250	0.265	6.35	6.73	
G	0.090		2.28		
J	0.018	0.023	0.48	0.58	
K	0.020	---	0.51	---	
S	0.370	0.410	9.40	10.42	
V	0.035	0.050	0.88	1.27	

## TYPICAL CHARACTERISTICS

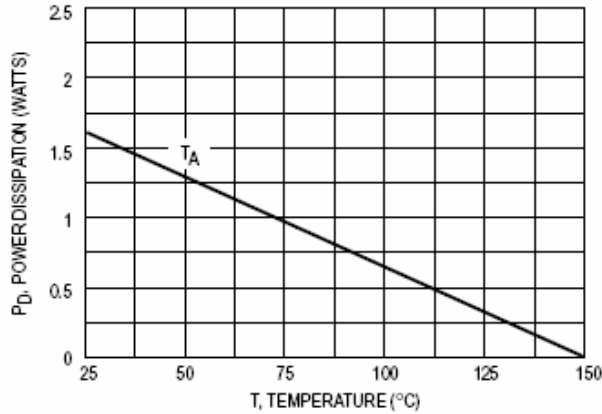
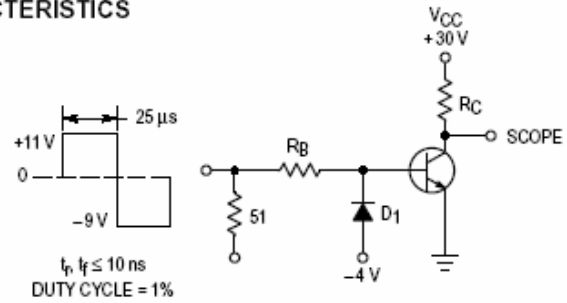


Figure 1. Power Derating



$R_B$  and  $R_C$  VARIED TO OBTAIN DESIRED CURRENT LEVELS  
 $D_1$  MUST BE FAST RECOVERY TYPE, e.g.:  
 1N5825 USED ABOVE  $I_B = 100$  mA  
 MSD6100 USED BELOW  $I_B = 100$  mA  
 REVERSE ALL POLARITIES FOR PNP.

Figure 2. Switching Time Test Circuit

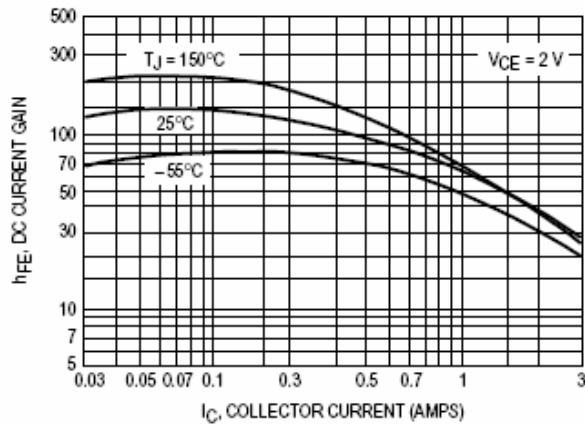


Figure 3. DC Current Gain

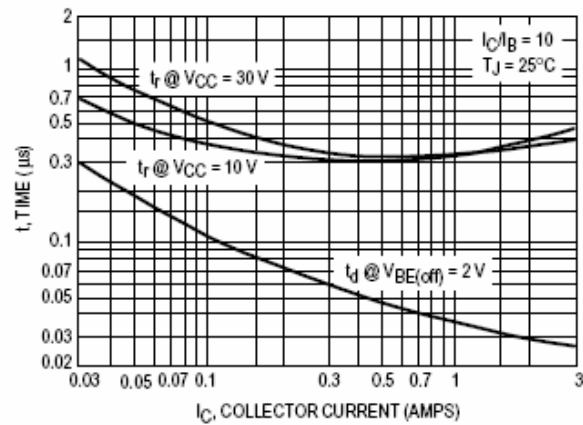


Figure 4. Turn-On Time

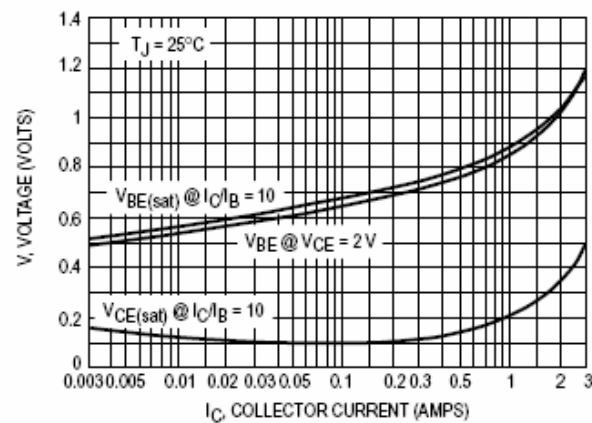


Figure 5. "On" Voltages

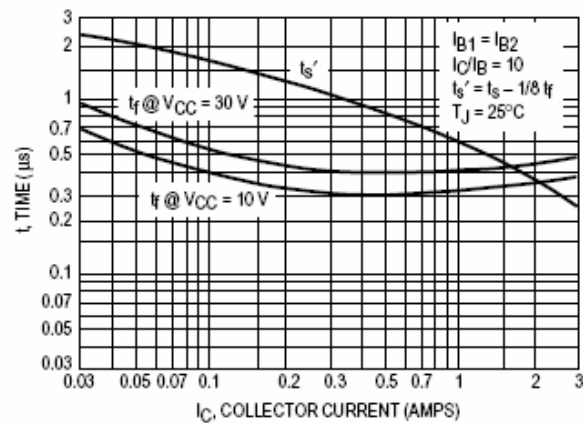


Figure 6. Turn-Off Time

# MJD32C

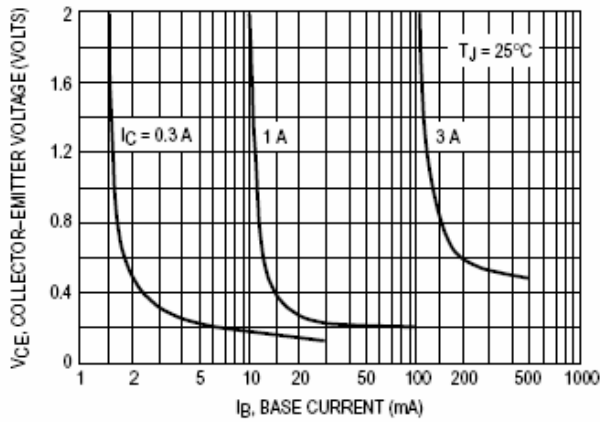


Figure 7. Collector Saturation Region

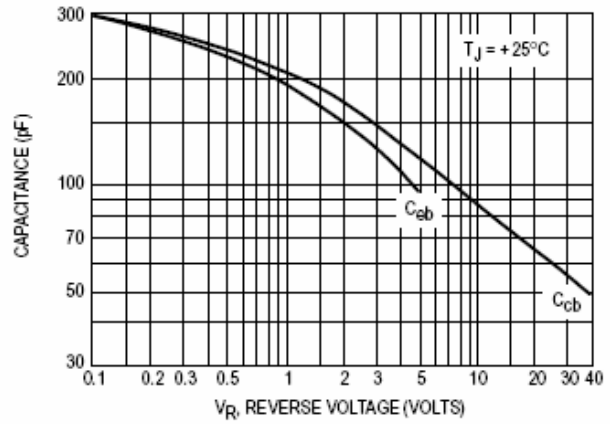


Figure 8. Capacitance

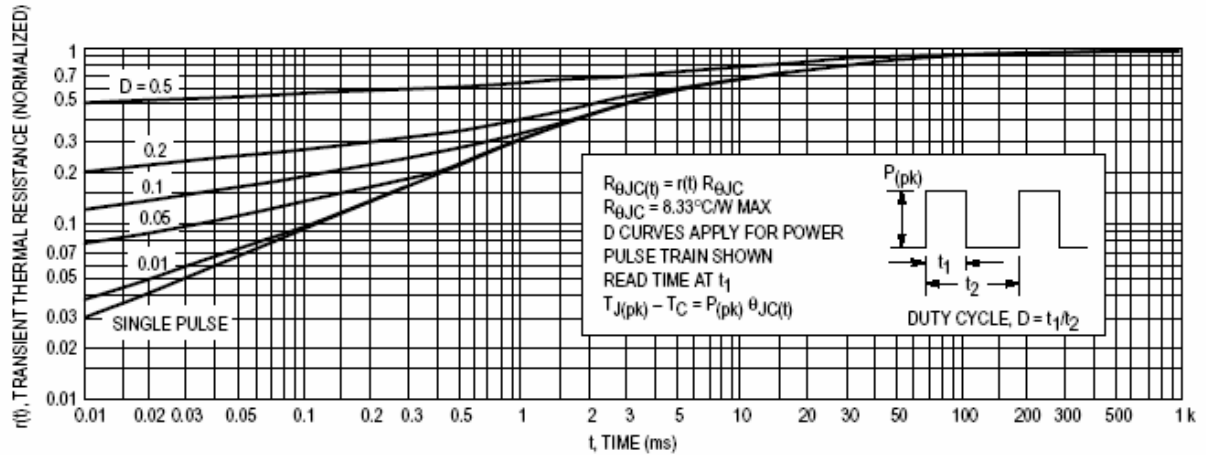


Figure 9. Thermal Response

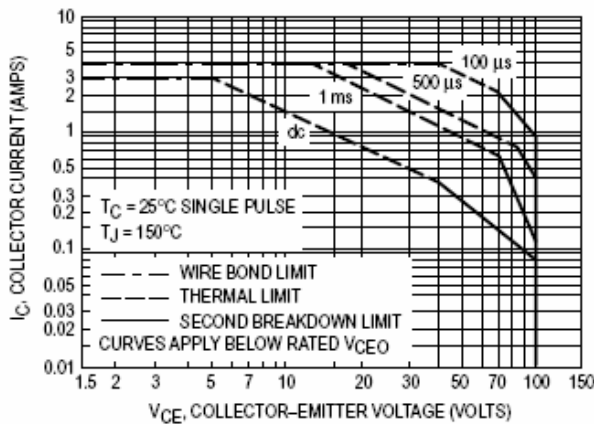


Figure 10. Active Region Safe Operating Area

There are two limitations on the power handling ability of a transistor: average junction temperature and second breakdown. Safe operating area curves indicate  $I_C - V_{CE}$  limits of the transistor that must be observed for reliable operation; i.e., the transistor must not be subjected to greater dissipation than the curves indicate.

The data of Figure 10 is based on  $T_{J(pk)} = 150^\circ\text{C}$ ;  $T_C$  is variable depending on conditions. Second breakdown pulse limits are valid for duty cycles to 10% provided  $T_{J(pk)} \leq 150^\circ\text{C}$ .  $T_{J(pk)}$  may be calculated from the data in Figure 9. At high case temperatures, thermal limitations will reduce the power that can be handled to values less than the limitations imposed by second breakdown.



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## Ordering Information

Device	Packing
(Part Number)-TP	Tape&Reel;2.5Kpcs/Reel

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