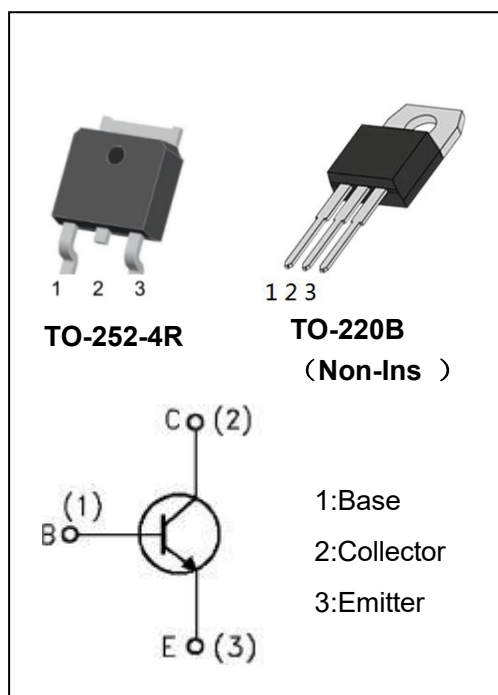


## TIP42 Series Transistor (PNP)

### FEATURES

- Medium Power Linear Switching Applications
- Complement to TIP42/42A/42B/42C



### Absolute Maximum Ratings

Parameter	Symbol	TIP42	TIP42A	TIP42B	TIP42C	Unit
Collector-Base Voltage	$V_{CBO}$	-40	-60	-80	-100	V
Collector-Emitter Voltage	$V_{CEO}$	-40	-60	-80	-100	V
Emitter-Base Voltage	$V_{EBO}$	-5				V
Collector Current	$I_C$	-6				A
Collector Power Dissipation	$P_C$	20				W
Storage Temperature	$T_{stg}$	-55~150				°C/W
Operating junction temperature range	$T_j$	-55~150				°C

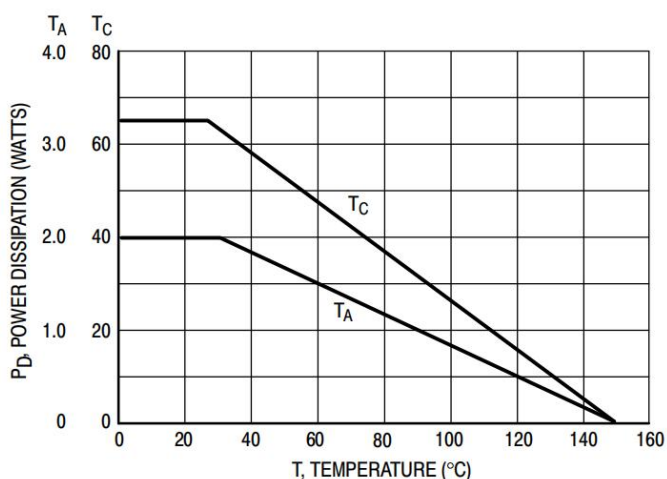


**ELECTRICAL CHARACTERISTICS** ( $T_j=25^{\circ}\text{C}$  unless otherwise specified)

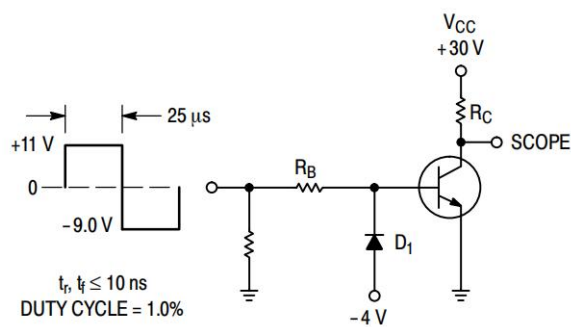
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Collector- base breakdown voltage	$V_{CBO}$	TIP42	$I_c = -30\text{mA}$ , $I_E = 0$	-40			V
		TIP42A		-60			
		TIP42B		-80			
		TIP42C		-100			
Collector-emitter sustaining voltage	$V_{CEO(SUS)}$	TIP42	$I_c = -30\text{mA}$ , $I_B = 0$	-40			V
		TIP42A		-60			
		TIP42B		-80			
		TIP42C		-100			
Emitter - base breakdown voltage	$V_{EBO}$	$I_E = -100\ \mu\text{A}$ , $I_C = 0$	-5				
Collector-base cut-off current	$I_{CBO}$	TIP42	$V_{CB} = -40\text{V}$ , $I_E = 0$			-0.1	$\mu\text{A}$
		TIP42A	$V_{CB} = -60\text{V}$ , $I_E = 0$				
		TIP42B	$V_{CB} = -80\text{V}$ , $I_E = 0$				
		TIP42C	$V_{CB} = -100\text{V}$ , $I_E = 0$				
Collector- emittercut-off current	$I_{CEO}$	TIP42/42A	$V_{CE} = -30\text{V}$ , $I_E = 0$			-0.7	mA
		TIP42B/42C	$V_{CE} = -60\text{V}$ , $I_E = 0$				
Collector- emittercut-off current	$I_{CES}$	TIP42	$V_{CE} = -40\text{V}$ , $I_E = 0$			-400	$\mu\text{A}$
		TIP42A	$V_{CE} = -60\text{V}$ , $I_E = 0$				
		TIP42B	$V_{CE} = -80\text{V}$ , $I_E = 0$				
		TIP42C	$V_{CE} = -100\text{V}$ , $I_E = 0$				
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5\text{V}$ , $I_C = 0$			-1	mA	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -6\text{A}$ , $I_B = -600\text{mA}$			-1.5	V	
Base - emitter saturation voltage	$V_{BE(sat)}$	$V_{CE} = -4\text{V}$ , $I_C = -6\text{A}$			-2		
DC current gain	$h_{FE(1)}$	$V_{CE} = -4\text{V}$ , $I_C = -300\text{mA}$	30				
	$h_{FE(2)}$	$V_{CE} = -4\text{V}$ , $I_C = -3\text{A}$	15		75		
Transition frequency	$f_T$	$V_{CE} = -10\text{V}$ , $I_C = -500\text{mA}$	3			MHz	



**ELECTRICAL CHARACTERISTICS**

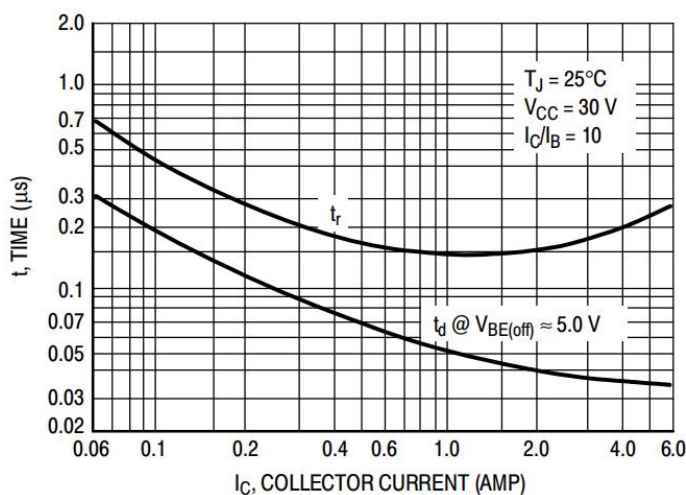


**Figure 1. Power Derating**

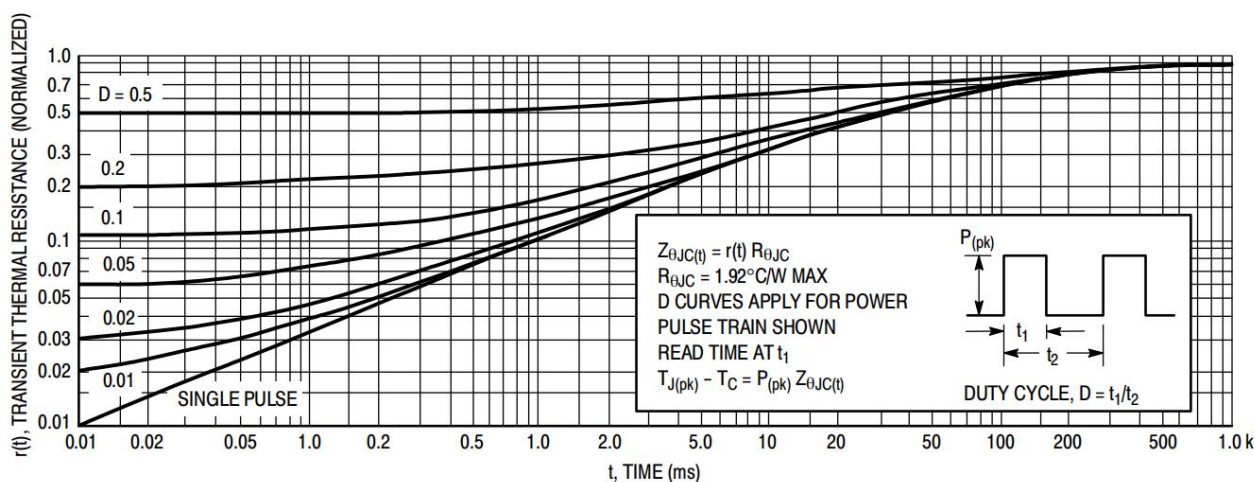


$R_B$  and  $R_C$  VARIED TO OBTAIN DESIRED CURRENT LEVELS  
 $D_1$  MUST BE FAST RECOVERY TYPE, e.g.:  
 1N5825 USED ABOVE  $I_B \approx 100$  mA  
 MSD6100 USED BELOW  $I_B \approx 100$  mA

**Figure 2. Switching Time Test Circuit**



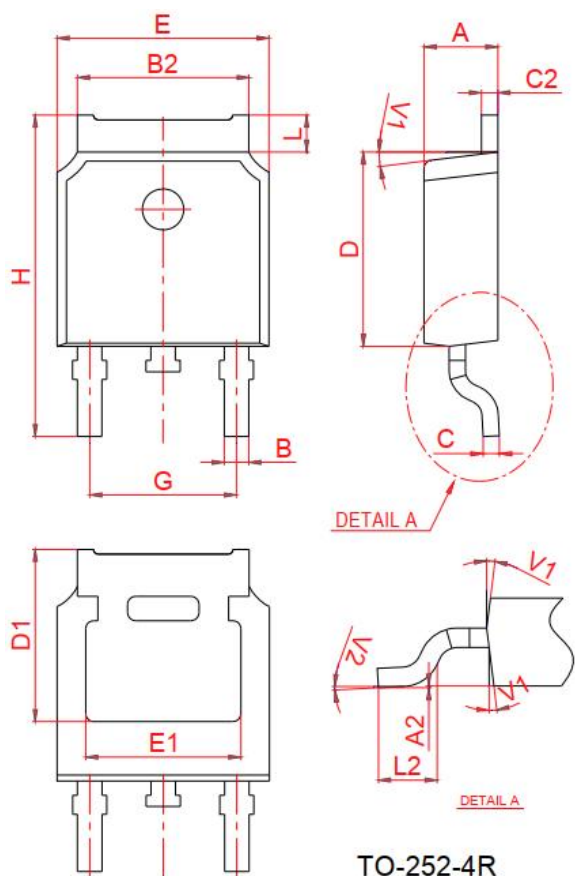
**Figure 3. Turn-On Time**



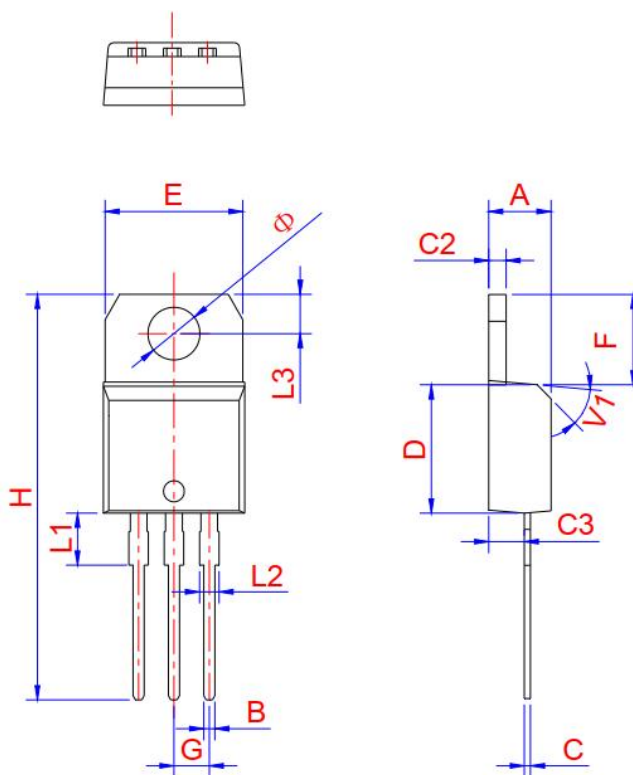
**Figure 4. Thermal Response**



PACKAGE MECHANICAL DATA



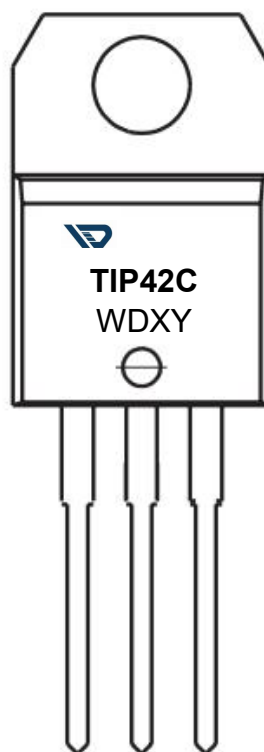
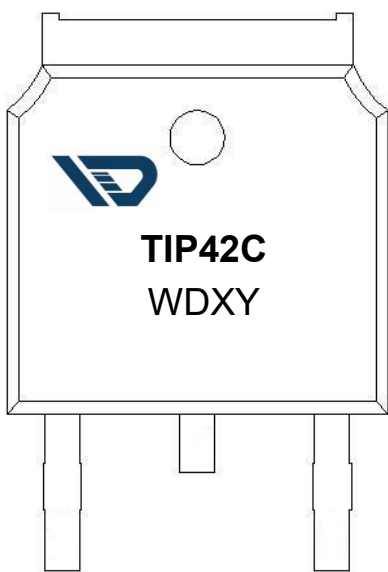
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.2		2.4	0.087		0.094
A2	0		0.1	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.1		5.46	0.201		0.215
C	0.46		0.58	0.018		0.023
C2	0.44		0.58	0.017		0.023
D	5.9		6.3	0.232		0.248
D1	5.30REF			0.211REF		
E	6.4		6.8	0.252		0.268
E1	4.63			0.182		
G	4.372		4.772	0.172		0.188
H	9.8		10.4	0.386		0.409
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4	4.47	4.6	0.173	0.176	0.181
B	0.61		0.88	0.024		0.035
C	0.46	0.50	0.7	0.018	0.02	0.028
C2	1.21	1.27	1.32	0.048	0.050	0.052
C3	2.4		2.72	0.094		0.107
D	8.6		9.7	0.339		0.382
E	9.8		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	
H	28		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.7	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	
Φ	3.7	3.75	3.8	0.145	0.147	0.149



**MAKING**



TIP42C = Device code

WD = Company Code

X = Year code

Y= Week code

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