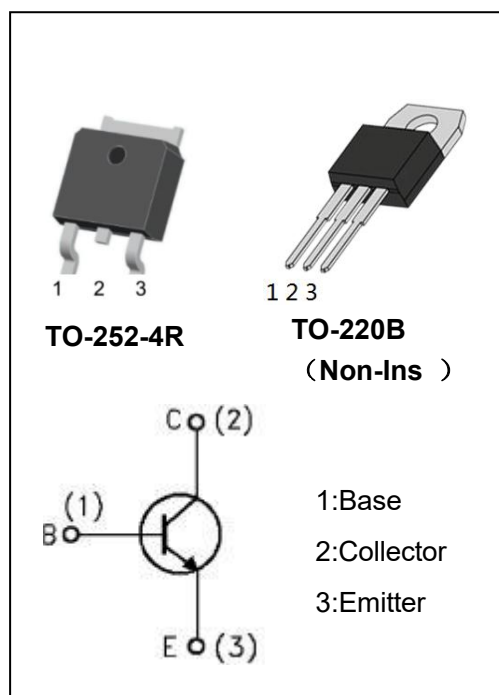


TIP41 Series Transistor (NPN)

FEATURES

- Medium Power Linear Switching Applications
- Complement to TIP41/41A/41B/41C



Absolute Maximum Ratings

Parameter	Symbol	TIP41	TIP41A	TIP41B	TIP41C	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}	TIP41	$I_c= 30\text{mA} , I_E=0$	40		V	
		TIP41A		60			
		TIP41B		80			
		TIP41C		100			
Collector-emitter sustaining voltage	$V_{CEO(SUS)}$	TIP41	$I_c= 30\text{ mA} , I_B=0$	40		V	
		TIP41A		60			
		TIP41B		80			
		TIP41C		100			
Emitter - base breakdown voltage	V_{EBO}	$I_E= 100\ \mu\text{A} , I_C=0$	5				
Collector-base cut-off current	I_{CBO}	TIP41	$V_{CB}= 40\text{ V} , I_E=0$			0.1	μA
		TIP41A	$V_{CB}= 60\text{ V} , I_E=0$				
		TIP41B	$V_{CB}= 80\text{ V} , I_E=0$				
		TIP41C	$V_{CB}= 100\text{ V} , I_E=0$				
Collector- emittercut-off current	I_{CEO}	TIP41/41A	$V_{CE}= 30\text{ V} , I_E=0$			0.7	mA
		TIP41B/41C	$V_{CE}= 60\text{ V} , I_E=0$				
Collector- emittercut-off current	I_{CES}	TIP41	$V_{CE}= 40\text{ V} , I_E=0$			400	μA
		TIP41A	$V_{CE}= 60\text{ V} , I_E=0$				
		TIP41B	$V_{CE}= 80\text{ V} , I_E=0$				
		TIP41C	$V_{CE}= 100\text{ V} , I_E=0$				
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

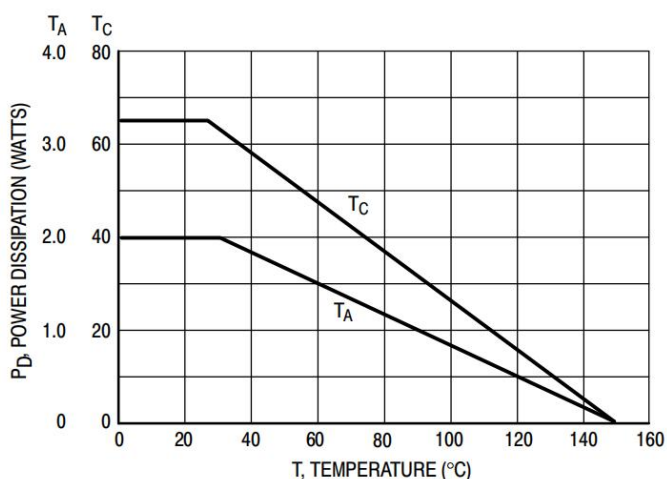
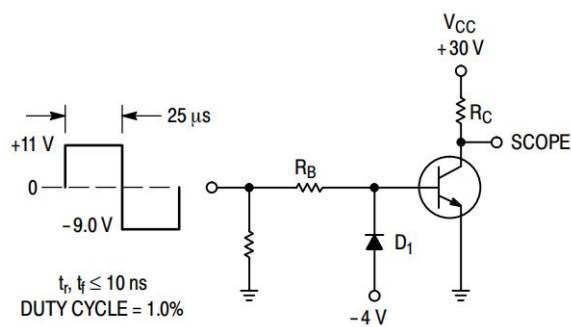


Figure 1. Power Derating



$t_r, t_f \leq 10 \text{ ns}$
 DUTY CYCLE = 1.0%
 R_B and R_C VARIED TO OBTAIN DESIRED CURRENT LEVELS
 D_1 MUST BE FAST RECOVERY TYPE, e.g.:
 1N5825 USED ABOVE $I_B \approx 100 \text{ mA}$
 MSD6100 USED BELOW $I_B \approx 100 \text{ mA}$

Figure 2. Switching Time Test Circuit

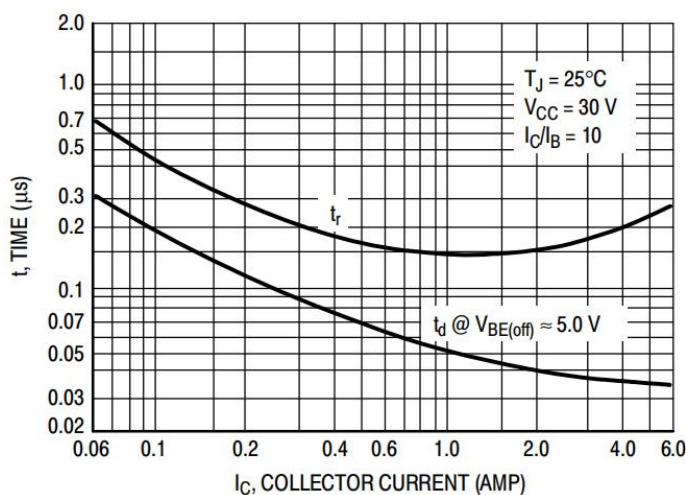


Figure 3. Turn-On Time

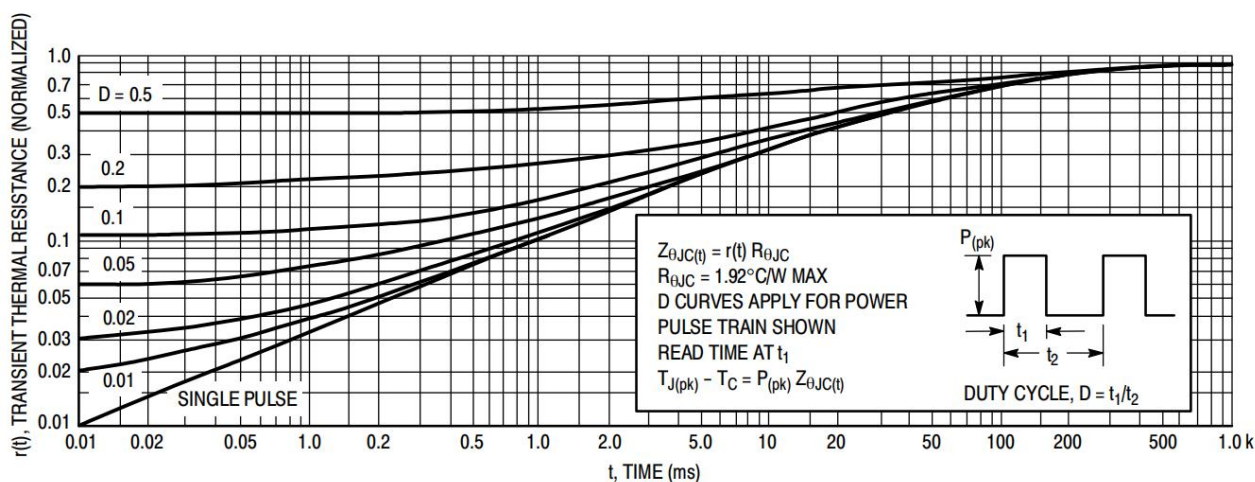
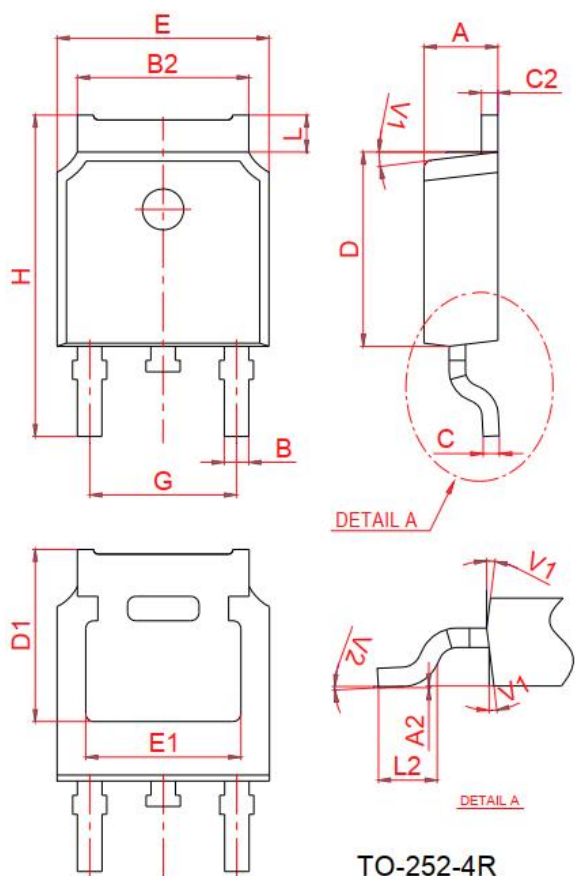


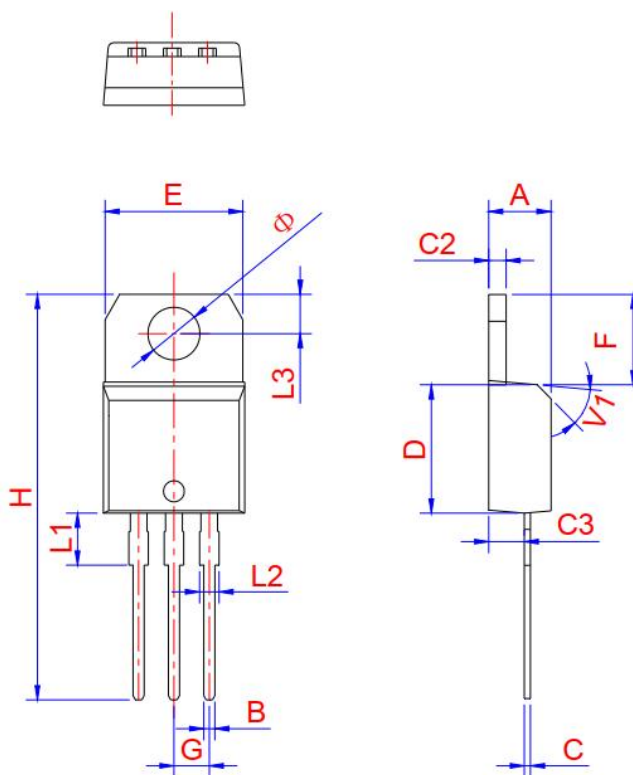
Figure 4. Thermal Response



PACKAGE MECHANICAL DATA



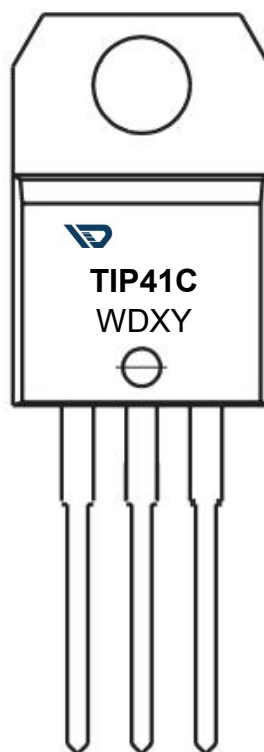
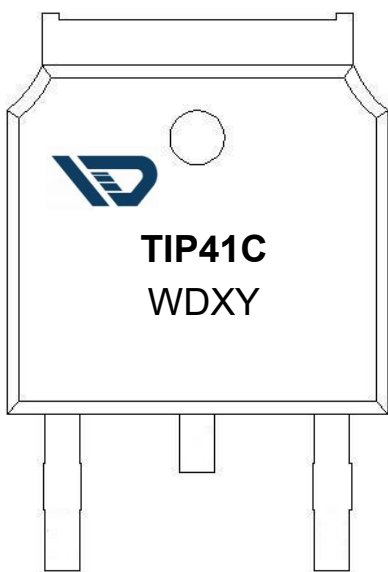
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.2		2.4	0.087		0.094
A2	0		0.1	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.1		5.46	0.201		0.215
C	0.46		0.58	0.018		0.023
C2	0.44		0.58	0.017		0.023
D	5.9		6.3	0.232		0.248
D1	5.30REF			0.211REF		
E	6.4		6.8	0.252		0.268
E1	4.63			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



TIP41C = Device code

WD = Company Code

X = Year code

Y= Week code

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