Bipolar Transistors Cross Reference

INDUSTY STANDARD	ST REPLACEMENT	ST NEAREST PREFERRED
2N3016		2N5339
2N3021		BDW52C
2N3022		BDW52C
2N3023		BDW52C
2N3024		BDW52C
2N3025		BDW52C
2N3026		BDW52C
2N3055	2N3055	
2N3076		BUX98
2N3171		BDW52C
2N3172		BDW52C
2N3173		BDW52C
2N3174		TIP2955
2N3183		BDW52C
2N3184		BDW52C
2N3185		BDW52C
2N3186		TIP2955
2N3195		BDW52C
2N3196		BDW52C
2N3198		MJ2955
2N3202		BSS44
2N3203		BSS44
2N3232		BDW51C
2N3233		BDW51C
2N3235		2N3055
2N3236		BDW51C
2N3238		BDW51C
2N3239		BDW51C
2N3240		BUX10
2N3419		2N5339
2N3420		2N5339
2N3421		2N5339
2N3439	2N3439	
2N3440	2N3440	
2N3445		BDW51C
2N3446		BDW51C
2N3447		BDW51C
2N3448		BDW51C
2N3667		BDW51C
2N3713		BDW51C
2N3715		BDW51C
2N3716		BDW51C
2N3719		BSS44
2N3720		BSS44
2N3771	2N3771	
2N3772	2N3772	
2N3789		BDW52C
2N3790		BDW52C
2N3791		BDW52C
2N3792		BDW52C
2N3863		BDW51C

INDUSTY STANDARD	ST REPLACEMENT	ST NEAREST PREFERRED
2N3864		BDW51C
2N3865		BUV50
2N3868		BSS44
2N3902		BUX48A
2N3996		2N5339
2N3997		2N5339
2N3999		2N5339
2N4000		2N5339
2N4001		2N5339
2N4002		BUV20
2N4111		BDW51C
2N4113		BDW51C
2N4115		2N5339
2N4116		2N5339
2N4300		2N5339
2N4301		2N5339
2N4305		2N5339
2N4307		2N5339
2N4309		2N5339
2N4311		2N5339
2N4314		BSS44
2N4398		2N5884
2N4399		2N5884
2N4877		2N5339
2N4895		BFX34
2N4897		BFX34
2N4901		MJ2955
2N4902		MJ2955
2N4903		MJ2955
2N4904		MJ2955
2N4905		MJ2955
2N4906		MJ2955
2N4907		BDW52C
2N4908		BDW52C
2N4909		BDW52C
2N4913		BDW51C
2N4914		BDW51C
2N4915		BDW51C
2N4918		2N4920
2N4919		2N4920
2N4920	2N4920	
2N4921		BD235
2N4922		BD235
2N4923		BD237
2N4998		2N5339
2N5000		2N5339
2N5002		2N5339
2N5004		2N5339
2N5034		2N3055
2N5035		2N3055
2N5036		2N3055

Bipolar Transistors Cross Reference

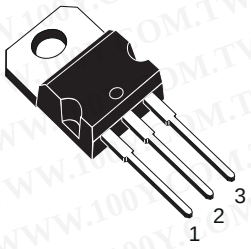
INDUSTY STANDARD	ST REPLACEMENT	ST NEAREST PREFERRED
BD837		BD179
BD861		BD677
BD862		BD678
BD863		BD677
BD864		BD678
BD865		BD679
BD866		BD680
BD875		BD677
BD876		BD678
BD877		BD677
BD878		BD678
BD879		BD679
BD880		BD680
BD895		BDW93B
BD895A		BDW93B
BD896		BDW94B
BD896A		BDW94B
BD897		BDW93B
BD897A		BDW93B
BD898		BDW94B
BD898A		BDW94B
BD899		BDW93B
BD899A		BDW94B
BD900		BDW94B
BD900A		BDW94B
BD901		BDW94C
BD902		BDW94C
BD905		BD909
BD906		BD910
BD907		BD909
BD908		BD910
BD909	BD909	
BD910	BD910	
BD911	BD911	
BD912	BD912	
BD933		BD241B
BD934		BD242B
BD935		BD241B
BD936		BD242B
BD937		BD241B
BD938		BD242B
BD939		BD239C
BD940		BD242C
BD943		BD535
BD943F		BD533FI
BD944		BD534
BD944F		BD534FI
BD945		BD535
BD945/T		BD435
BD946F		BD534FI
BD947		BD535
BD948		BD534

INDUSTY STANDARD	ST REPLACEMENT	ST NEAREST PREFERRED
BD949		BD241A
BD950		BD536
BD951		BD241B
BD952		BD242B
BD953		BD241C
BD954		BD242C
BDT20/T		BDX54F
BDT21		BDX53F
BDT29		TIP29A
BDT29A		TIP29A
BDT29B		TIP29C
BDT29C		TIP29C
BDT30		TIP30A
BDT30A		TIP30A
BDT30B		TIP30C
BDT30C		TIP30C
BDT31		TIP31A
BDT31A		TIP31A
BDT31B		TIP31C
BDT31C		TIP31C
BDT32		TIP32A
BDT32A		TIP32A
BDT32B		TIP32B
BDT32C		TIP32C
BDT41		TIP41A
BDT41A		TIP41A
BDT41B		TIP41B
BDT41C		TIP41C
BDT42		TIP42A
BDT42A		TIP42A
BDT42B		TIP42B
BDT42C		TIP42C
BDT60		TIP125
BDT60A		TIP126
BDT60B		TIP127
BDT60C		BDX54F
BDT60F		BDW94BFI
BDT61		TIP120
BDT61A		TIP121
BDT61B		TIP122
BDT61C		BDX53C
BDT62		BDW94B
BDT62A		BDW94B
BDT62B		BDW94C
BDT63		BDW93B
BDT63A		BDW93B
BDT63B		BDW93C
BDT63C		BDW93C
BDT64		TIP147T
BDT64A		TIP147T
BDT64B		TIP147T
BDT64C		TIP147T

TIP142T
TIP147T

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- COMPLEMENTARY PNP - NPN DEVICES
- MONOLITHIC DARLINGTON CONFIGURATION
- LOW VOLTAGE
- HIGH CURRENT
- HIGH GAIN



TO-220

APPLICATIONS

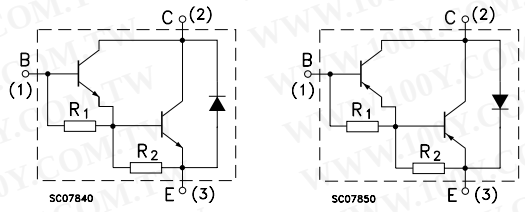
- GENERAL PURPOSE SWITCHING

DESCRIPTION

The TIP142T is a silicon Epitaxial-Base NPN power transistor in monolithic Darlington configuration, mounted in TO-220 plastic package. It is intented for use in power linear and switching applications.

The complementary PNP type is TIP147T.

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
		NPN	TIP142T	
		PNP	TIP147T	
V_{CBO}	Collector-Base Voltage (I_E = 0)		100	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)		100	V
V_{EBO}	Emitter-Base Voltage (I_C = 0)		5	V
I_C	Collector Current		15	A
I_{CM}	Collector Peak Current (t_p < 5ms)		20	A
I_B	Base Current		0.5	A
P_{tot}	Total Dissipation at $T_{case} \leq 25\ ^oC$		90	W
T_{stg}	Storage Temperature		- 65 to 150	^oC
T_j	Max. Operating Junction Temperature		150	^oC

For PNP types voltage and current values are negative.

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	1.38	°C/W

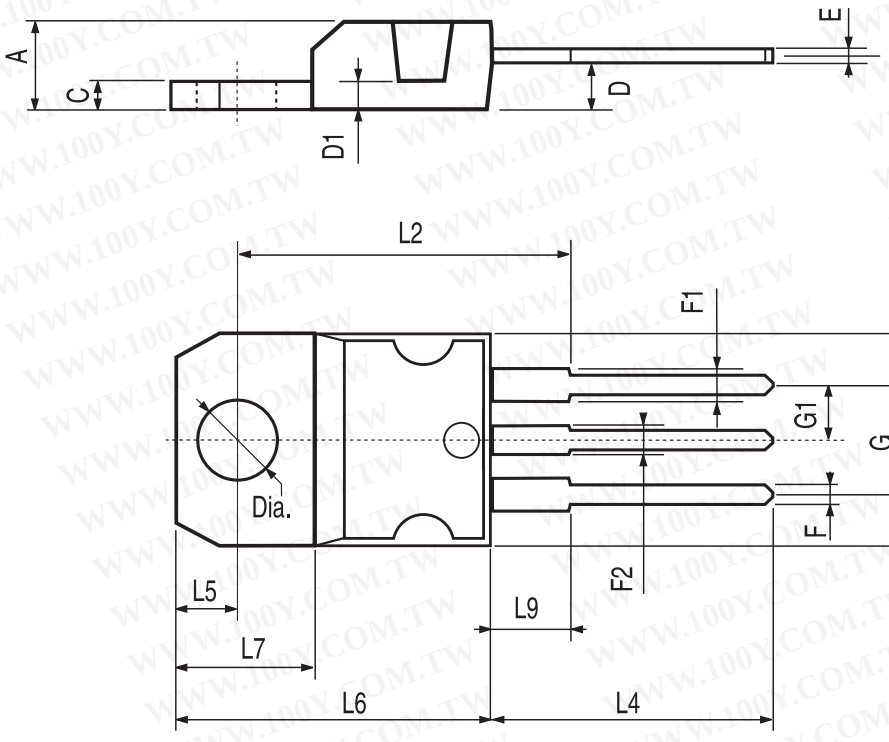
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current (I_E = 0)	V_{CB} = 100 V				1	mA
I_{CEO}	Collector Cut-off Current (I_B = 0)	V_{CE} = 50 V				2	mA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 5 V				2	mA
$V_{CEO(sus)}$*	Collector-Emitter Sustaining Voltage (I_B = 0)	I_C = 30 mA		100			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 5 A I_C = 10 A	I_B = 10 mA I_B = 40 mA			2 3	V V
$V_{BE(on)}$*	Base-Emitter Voltage	I_C =10 A	V_{CE} = 4 V			3	V
h_{FE}*	DC Current Gain	I_C = 5 A I_C = 10 A	V_{CE} = 4 V V_{CE} = 4 V	1000 500			
	RESISTIVE LOAD						
t_{on}	Turn-on Time	I_C = 10 A	I_{B1} = 10 mA		0.9		µs
t_{off}	Turn-off Time	I_{B2} = -40 mA	R_L = 3 Ω		4		µs

For PNP types voltage and current values are negative.
∗ Pulsed: Pulse duration = 300 µs, duty cycle 1.5 %.

TO-220 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151



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