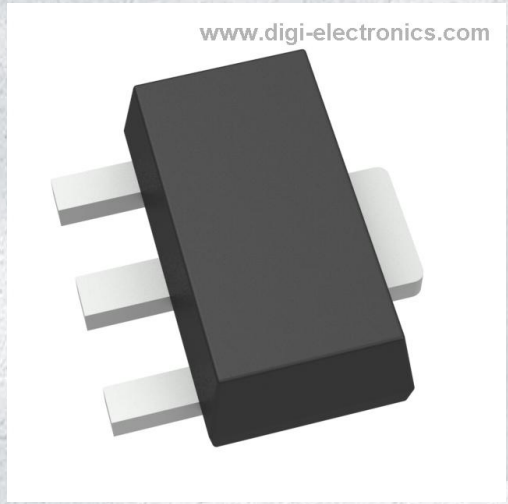
ZX5T853ZTA Datasheet



DiGi Electronics Part Number	ZX5T853ZTA-DG
Manufacturer	Diodes Incorporated
Manufacturer Product Number	ZX5T853ZTA
Description	TRANS NPN 100V 4.5A SOT89-3
Detailed Description	Bipolar (BJT) Transistor NPN 100 V 4.5 A 130MHz 2.1 W Surface Mount SOT-89-3

https://www.DiGi-Electronics.com

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
ZX5T853ZTA	Diodes Incorporated
Series:	Product Status:
-	Obsolete
Transistor Type:	Current - Collector (Ic) (Max):
NPN	4.5 A
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
100 V	195mV @ 500mA, 5A
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
20nA (ICBO)	100 @ 2A, 2V
Power - Max:	Frequency - Transition:
2.1 W	130MHz
Operating Temperature:	Mounting Type:
-55°C ~ 150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
TO-243AA	SOT-89-3
Base Product Number:	
ZX5T853	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Affected	EAR99
HTSUS:	
8541.29.0075	

ZX5T853Z

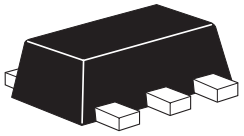
100V NPN LOW SATURATION MEDIUM POWER TRANSISTOR IN SOT89

SUMMARY

BV_{CEO} = 100V : R_{SAT} = 31mΩ; I_C = 4.5A

DESCRIPTION

Packaged in the SOT89 outline this new 5th generation low saturation 100V NPN transistor offers extremely low on state losses making it ideal for use in DC-DC circuits and various driving and power management functions.



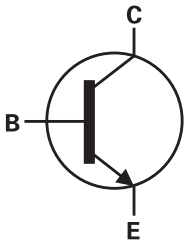
SOT89

FEATURES

- 4.5 amps continuous current
- Up to 10 amps peak current
- Very low saturation voltages

APPLICATIONS

- Motor driving
- Line switching
- High side switches
- Subscriber line interface cards (SLIC)



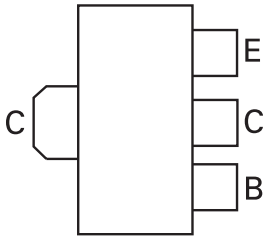
ORDERING INFORMATION

DEVICE	REEL SIZE	TAPE WIDTH	QUANTITY PER REEL
ZX5T853ZTA	7"	12mm embossed	1000 units

DEVICE MARKING

- 853

PINOUT



VIEW

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ZX5T853Z

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	LIMIT	UNIT
Collector base voltage	BV_{CBO}	200	V
Collector emitter voltage	BV_{CEO}	100	V
Emitter base voltage	BV_{EBO}	7	V
Continuous collector current[a]	I_C	4.5	A
Peak pulse current	I_{CM}	10	A
Power dissipation at T_A=25°C [a] Linear derating factor	P_D	1.5 12	W mW/°C
Power dissipation at T_A=25°C [b] Linear derating factor	P_D	2.1 16.8	W mW/°C
Operating and storage temperature range	T_j, T_{stg}	-55 to +150	°C

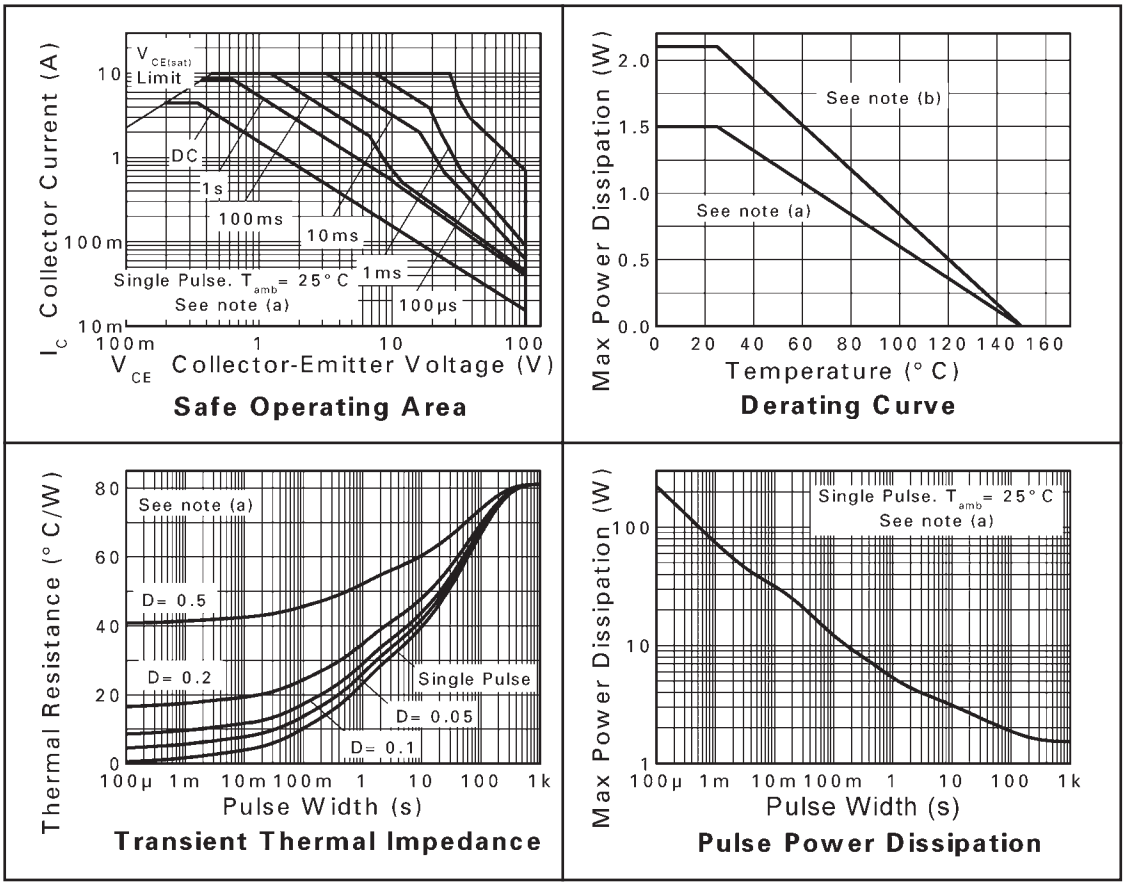
THERMAL RESISTANCE

PARAMETER	SYMBOL	LIMIT	UNIT
Junction to ambient[a]	$R_{\theta JA}$	83	°C/W
Junction to ambient[b]	$R_{\theta JA}$	60	°C/W

NOTES:
(a) For a device surface mounted on 25mm x 25mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.
(b) For a device surface mounted on 50mm x 50mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.

ZX5T853Z

CHARACTERISTICS



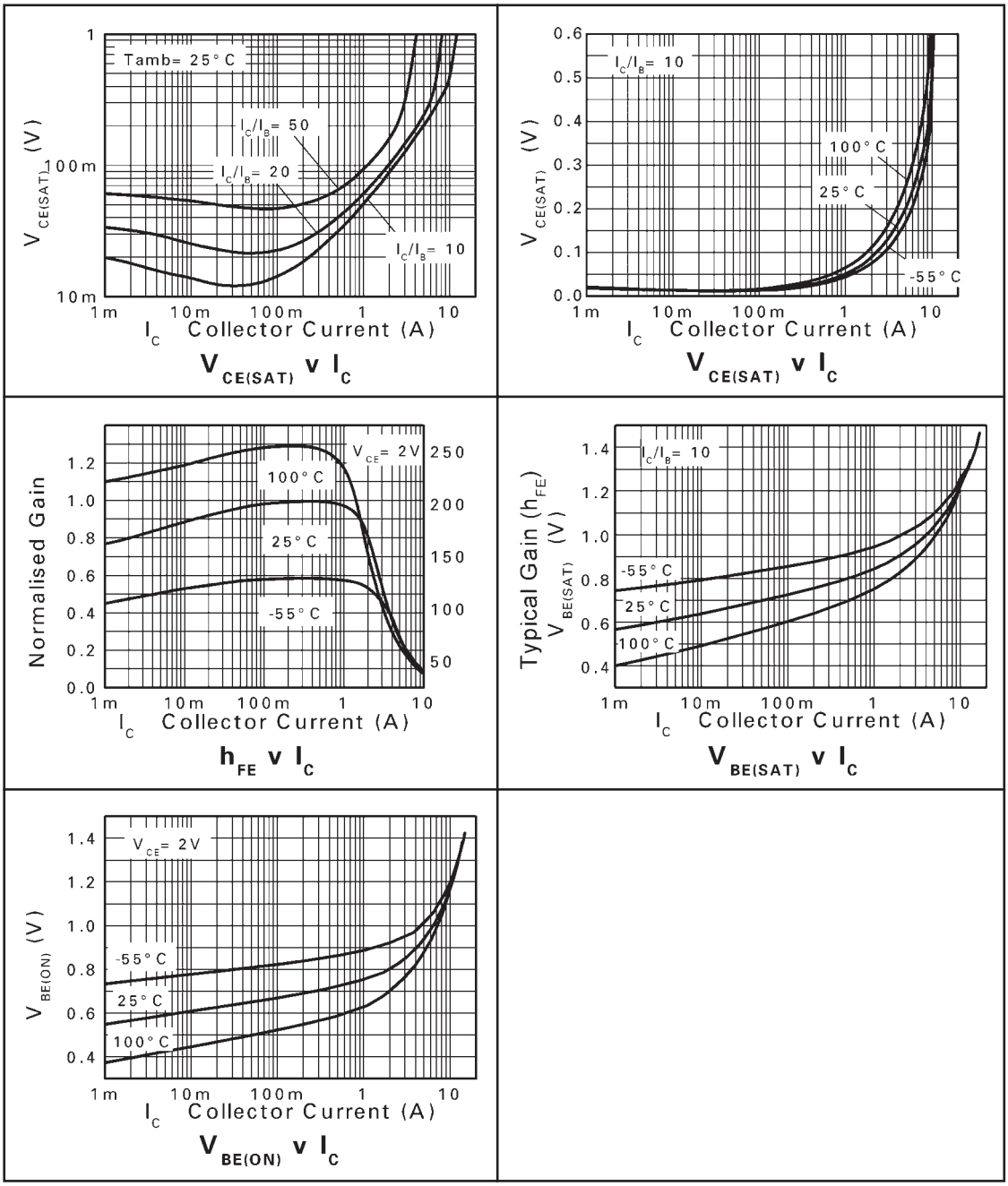
ZX5T853Z

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Collector base breakdown voltage	BV_{CBO}	200	235		V	I_C = 100μA
Collector emitter breakdown voltage	BV_{CER}	200	235		V	I_C = 1μA, RB ≤ 1kΩ
Collector emitter breakdown voltage	BV_{CEO}	100	115		V	I_C = 10mA*
Emitter base breakdown voltage	BV_{EBO}	7	8.1		V	I_E = 100μA
Collector cut-off current	I_{CBO}			20	nA	V_{CB} = 150V
				0.5	μA	V_{CB} = 150V, T_{amb}=100°C
Collector cut-off current	I_{CER}			20	nA	V_{CB} = 150V
	R≤1kΩ			0.5	μA	V_{CB} = 150V, T_{amb}=100°C
Emitter cut-off current	I_{EBO}			10	nA	V_{EB} = 6V
Collector-emitter saturation voltage	$V_{CE(SAT)}$		20	30	mV	I_C = 0.1A, I_B= 5mA*
			45	60	mV	I_C = 1A, I_B = 100mA*
			85	115	mV	I_C = 2A, I_B = 100mA*
			155	195	mV	I_C = 5A, I_B = 500mA*
Base emitter saturation voltage	$V_{BE(SAT)}$		1000	1100	mV	I_C = 5A, I_B = 500mA*
Base emitter turn on voltage	$V_{BE(ON)}$		900	1000	mV	I_C = 5A, V_{CE} = 2V*
Static forward current transfer ratio	h_{FE}	100	230			I_C = 10mA, V_{CE} = 2V*
		100	200	300		I_C = 2A, V_{CE} = 2V*
		30	60			I_C = 5A, V_{CE} = 2V*
		10	20			I_C = 10A, V_{CE} = 2V*
Transition frequency	f_T		130		MHz	I_C = 100mA, V_{CE} = 10V
						f=50MHz
Output capacitance	C_{OBO}		26		pF	V_{CB} = 10V, f= 1MHz*
Switching times	t_{ON}		41		ns	I_C = 1A, V_{CC} = 10V,
	t_{OFF}		1010			I_{B1} = I_{B2} = 100mA

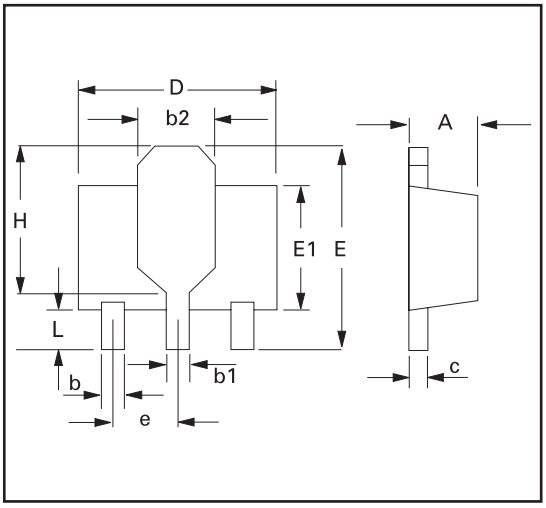
* Measured under pulsed conditions. Pulse width ≤ 300μs; duty cycle ≤ 2%.

TYPICAL CHARACTERISTICS



ZX5T853Z

PACKAGE OUTLINE



PACKAGE DIMENSIONS

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Min	Max
A	1.40	1.60	0.550	0.630	e	1.40	1.50	0.055	0.059
b	0.38	0.48	0.015	0.019	E	3.75	4.25	0.150	0.167
b1	-	0.53	-	0.021	E1	-	2.60	-	0.102
b2	1.50	1.80	0.060	0.071	G	2.90	3.00	0.114	0.118
c	0.28	0.44	0.011	0.017	H	2.60	2.85	0.102	0.112
D	4.40	4.60	0.173	0.181	-	-	-	-	-

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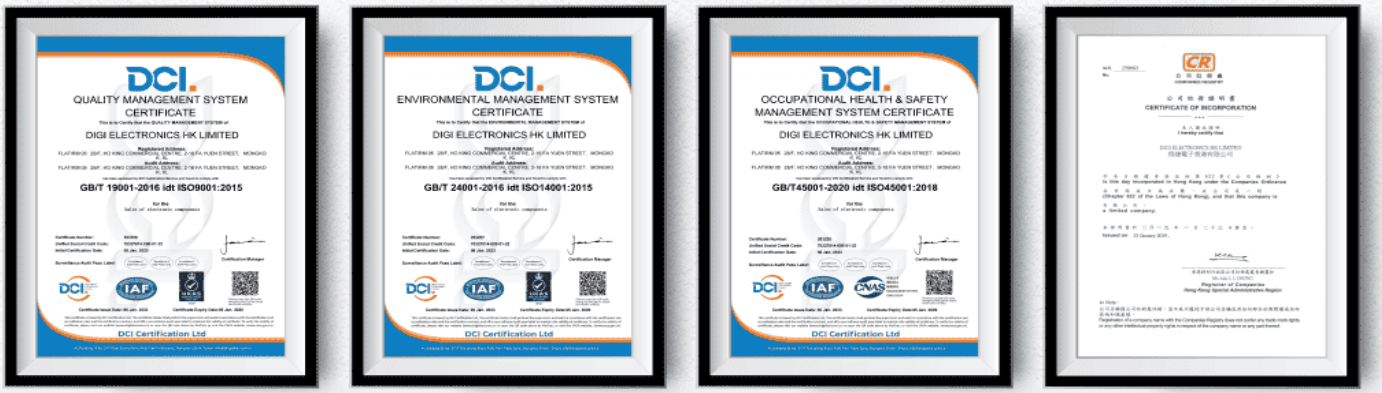

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