Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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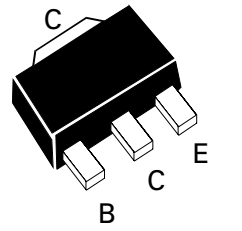
SOT89 NPN SILICON PLANAR
MEDIUM POWER HIGH VOLTAGE TRANSISTOR

FCX658A

ISSUE 1 – NOVEMBER 2000

FEATURES

* 400 Volt V_{CEO}
* 0.5 Amp continuous current
* P_{tot}=1 Watt
* Optimised h_{fe} characterised upto 200mA



SOT89

APPLICATIONS

* Telephone dialler circuits
* Hook switches for modems
* Predrivers within HID lamp ballasts
* (SLIC) Subscriber Line Interface Cards

Partmarking Detail - 65A

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	400	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	5	V
Peak Pulse Current	I_{CM}	1	A
Continuous Collector Current	I_C	500	mA
Power Dissipation at T_{amb}=25°C derate above 25°C	P_{tot}	1 5.7	W mW/ °C
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +150	°C

ZETEX

FCX658A

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

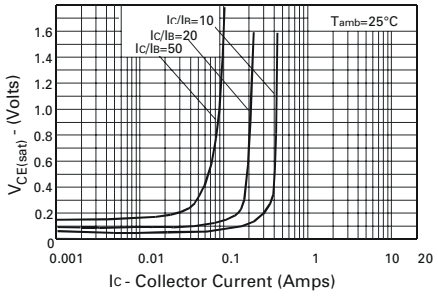
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	400	480		V	I_C=100μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	400	465		V	I_C=10mA*
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	7.8		V	I_E=100μA
Collector Cut-Off Current	I_{CBO}			100	nA	V_{CB}=320V
Collector Cut-Off Current	I_{CES}			100	nA	V_{CE}=320V
Emitter Cut-Off Current	I_{EBO}			100	nA	V_{EB}=4V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.165 0.125 0.2	V V V	I_C=20mA, I_B=1mA I_C=50mA, I_B=5mA* I_C=100mA, I_B=10mA*
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.75	0.85	V	I_C=100mA, I_B=10mA*
Base-Emitter Turn On Voltage	$V_{BE(on)}$		0.70	0.85	V	IC=100mA, V_{CE}=5V*
Static Forward Current Transfer Ratio	h_{FE}	85 100 55 35	150 170 130 90			I_C=1mA, V_{CE}=5V* I_C=10mA, V_{CE}=10V* I_C=100mA, V_{CE}=5V* I_C=200mA, V_{CE}=10V*
Transition Frequency	f_T	50			MHz	I_C=20mA, V_{CE}=20V f=20MHz
Output Capacitance	C_{obo}			10	pF	V_{CB}=20V, f=1MHz
Switching times	t_{on} t_{off}		130 3300		ns ns	I_C=100mA, V_C=100V I_{B1}=10mA, I_{B2}=-20mA

* Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤2%

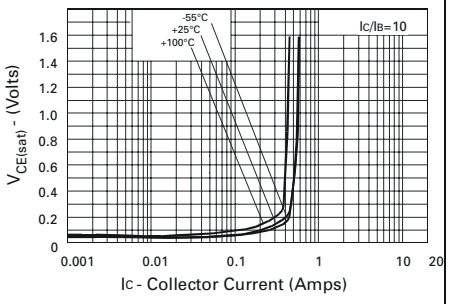
NB

For high voltage applications the appropriate industry sector PCB guidelines should be considered with regard to voltage spacing between conductors.

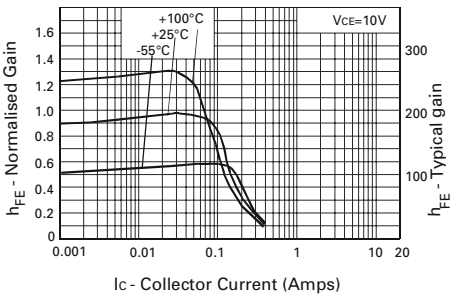
TYPICAL CHARACTERISTICS



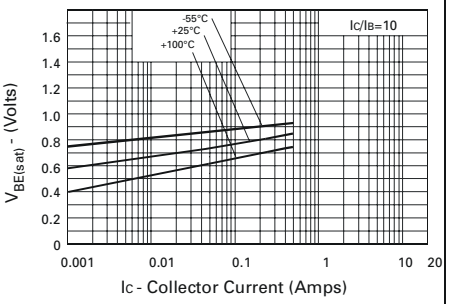
VCE(sat) v IC



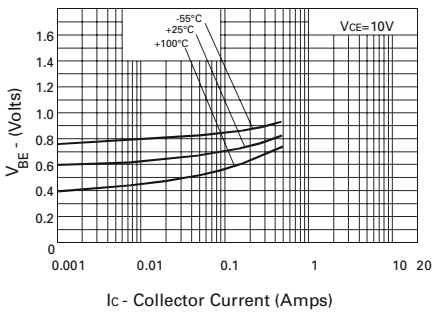
VCE(sat) v IC



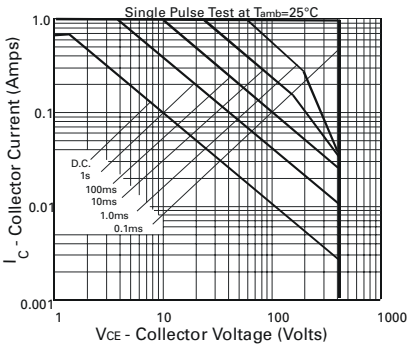
hFE v IC



VBE(sat) v IC



VBE(on) v IC

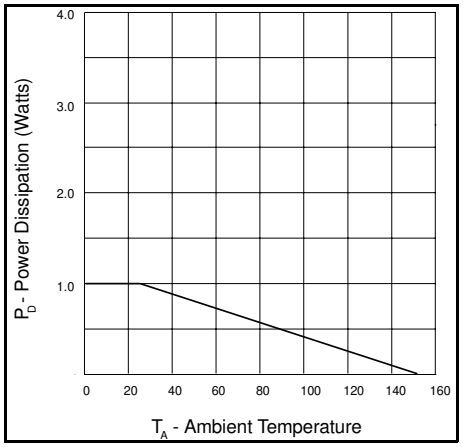


Safe Operating Area

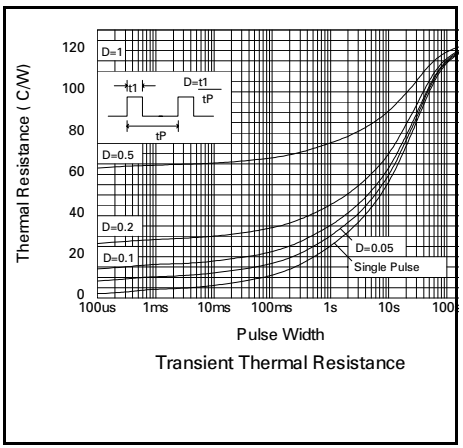
ZETEX

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance:Junction to Ambient[1] Junction to Case	$R_{th(j\text{-}amb)1}$ $R_{th(j\text{-}case)}$	125 10	°C/W °C/W



SOT89 (1W) Derating



Transient thermal resistance for a Zetex 1W SOT89 device mounted on a 15 mm x 15 mm ceramic substrate

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