SGS-THOMSON MICROELECTRONICS

BU921ZP/ZPFI
BU921ZT/ZTFI

S G S-THOMSON 30E D

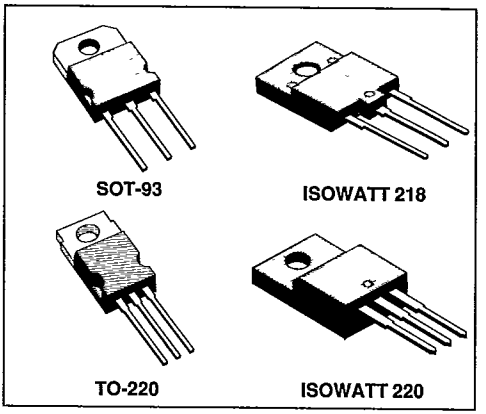
NPN POWER DARLINGTON

ADVANCE DATA

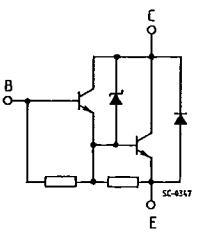
- HIGH RUGGEDNESS
- INTEGRATED HIGH VOLTAGE ZENER

AUTOMOTIVE MARKET

- APPLICATION IN HIGH PERFORMANCE ELECTRONIC CAR IGNITION



INTERNAL SCHEMATIC DIAGRAM



DESCRIPTION

The BU921ZP, BU921ZT, BU921ZPFI and BU921ZTFI are silicon multiepitaxial biplanar NPN transistors in monolithic darlington configuration mounted respectively in SOT-93, TO-220 plastic packages and ISOWATT218, ISOWATT220 fully isolated packages.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value				Unit
V_{CBO}	Collector-base Voltage (I_E = 0)	350				V
V_{CER}	Collector-emitter Voltage (R_{BE} = 100 Ω)	350				V
V_{CES}	Collector-emitter Voltage (V_{BE} = 0)	350				V
V_{CEO}	Collector-emitter Voltage (I_B = 0)	350				V
V_{EBO}	Emitter-base Voltage (I_C = 0)	5				V
I_C	Collector Current	16				A
I_B	Base Current	5				A
		SOT-93	ISOWATT218	TO-220	ISOWATT220	
P_{tot}	Total Dissipation at T_c < 25 °C	125	60	100	40	W
T_{stg}	Storage Temperature	– 40 to 150				°C
T_j	Max. Operating Junction Temperature	150				°C

THERMAL DATA

			SOT-93	ISOWATT218	TO-220	ISOWATT220	
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	1	2.08	1.25	3.12	°C/W

T-33-29

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

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CEO}	Collector Cut-off Current (I_B = 0)	V_{CE} = 350 V				250	µA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{BE} = − 5 V				50	mA
V_{CL}	Clamping Voltage	either	I_B = 0 or V_{BE} = 0				
		and	I_C = 100 mA	350		500	V
		same	T_j = 125 °C	350		500	V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 5 A	I_B = 50 mA		1.03	1.4	V
		I_C = 6 A	I_B = 75 mA		1.08	1.5	V
		I_C = 8 A	I_B = 120 mA		1.17	1.6	V
		T_j = 125 °C					
		I_C = 5 A	I_B = 50 mA		0.98		V
		I_C = 6 A	I_B = 75 mA		1.04		V
		I_C = 8 A	I_B = 120 mA		1.17		V
$V_{BE(sat)}$*	Base-emitter Saturation Voltage	I_C = 6 A	I_B = 75 mA			2.2	V
		I_C = 8 A	I_B = 120 mA			2.3	V
h_{FE}	DC Current Gain	I_C = 5 A	V_{CE} = 10 V	300			
V_F*	Diode Forward Voltage	I_F = 10 A				2.5	V
	USE TEST	V_{CC} = 24 V	L = 8 mH	8			A

* Pulsed : pulsed duration = 300 µs, duty cycle = 1.5 %.

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