

**GENERAL DESCRIPTION**

Passivated, sensitive gate triacs in a plastic envelope, intended for use in general purpose bidirectional switching and phase control applications. These devices are intended to be interfaced directly to microcontrollers, logic integrated circuits and other low power gate trigger circuits.

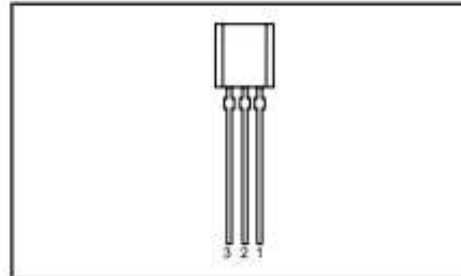
**QUICK REFERENCE DATA**

SYMBOL	PARAMETER	MAX.	MAX.	MAX.	UNIT	
$V_{DRM}$	Repetitive peak off-state voltages	<b>BT131-</b>	<b>500</b>	<b>600</b>	<b>800</b>	V
			500	600	800	
			1	1	1	
$I_{T(RMS)}$	RMS on-state current	1	1	1	A	
$I_{TSM}$	Non-repetitive peak on-state current	16	16	16	A	

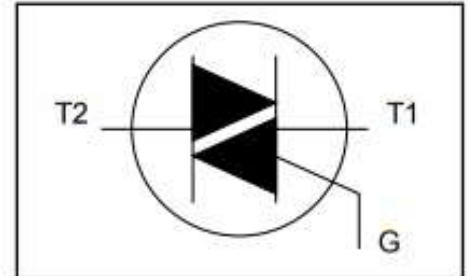
**PINNING - TO92**

PIN	DESCRIPTION
1	main terminal 2
2	gate
3	main terminal 1

**PIN CONFIGURATION**



**SYMBOL**



**LIMITING VALUES**

Limiting values in accordance with the Absolute Maximum System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.			UNIT
				-500	-600	-800	
$V_{DRM}$	Repetitive peak off-state voltages		-	500 <sup>1</sup>	600 <sup>1</sup>	800	V
$I_{T(RMS)}$	RMS on-state current	full sine wave; $T_{lead} \leq 51^\circ C$	-	1			A
$I_{TSM}$	Non-repetitive peak on-state current	full sine wave; $T_j = 25^\circ C$ prior to surge $t = 20$ ms	-	16			A
		$t = 16.7$ ms	-	17.6			A
		$t = 10$ ms	-	1.28			A <sup>2</sup> s
$I^2t$	$I^2t$ for fusing	$I_{TM} = 1.5$ A; $I_G = 0.2$ A;	-	50			A/μs
$dl_T/dt$	Repetitive rate of rise of on-state current after triggering	$dl_G/dt = 0.2$ A/μs	-	50			A/μs
		T2+ G+	-	50			A/μs
		T2+ G-	-	50			A/μs
		T2- G-	-	10			A/μs
		T2- G+	-	2			A
$I_{GM}$	Peak gate current		-	5			V
$V_{GM}$	Peak gate voltage		-	5			W
$P_{GM}$	Peak gate power		-	0.5			W
$P_{G(AV)}$	Average gate power	over any 20 ms period	-	150			°C
$T_{stg}$	Storage temperature		-40	125			°C
$T_j$	Operating junction temperature		-	125			°C

### THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{\theta j-lead}$	Thermal resistance junction to lead	full cycle	-	-	60	K/W
		half cycle	-	-	80	K/W
$R_{\theta j-a}$	Thermal resistance junction to ambient	pcb mounted; lead length = 4mm	-	150	-	K/W

### STATIC CHARACTERISTICS

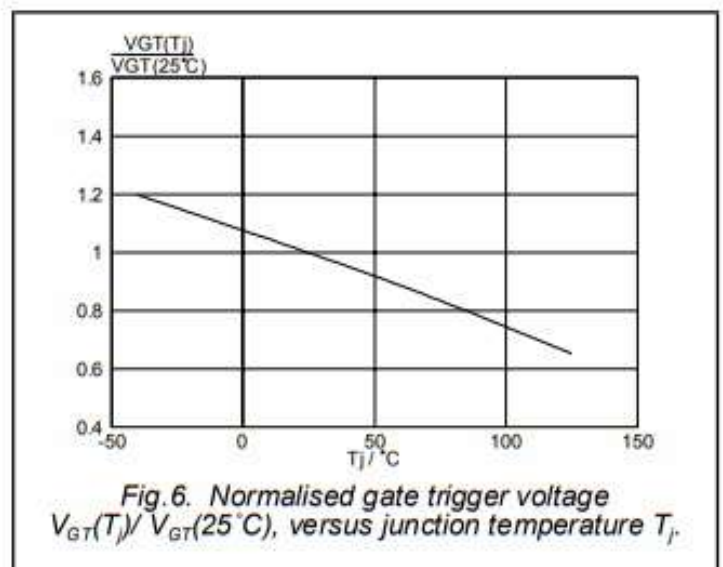
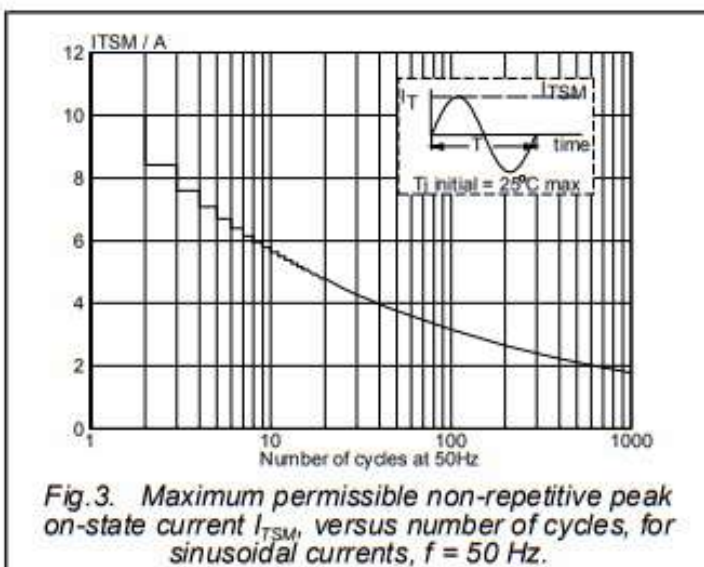
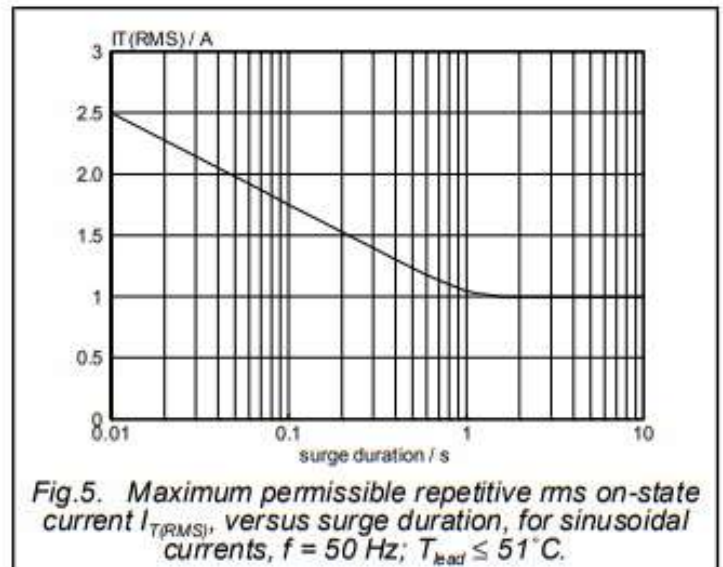
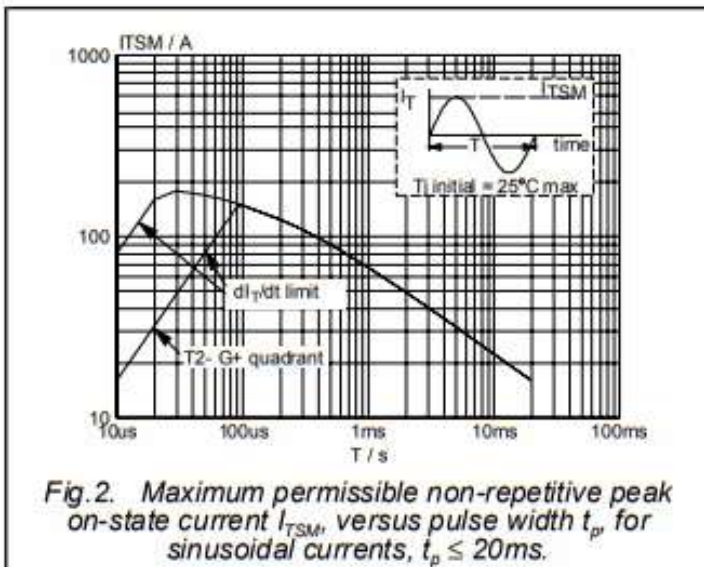
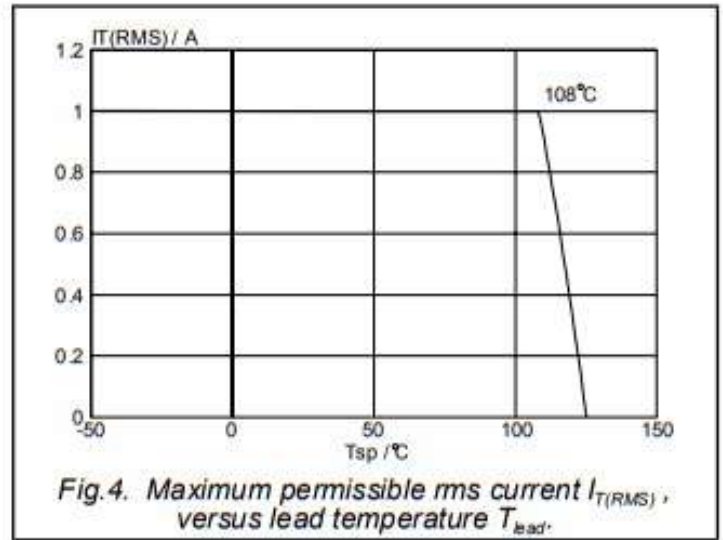
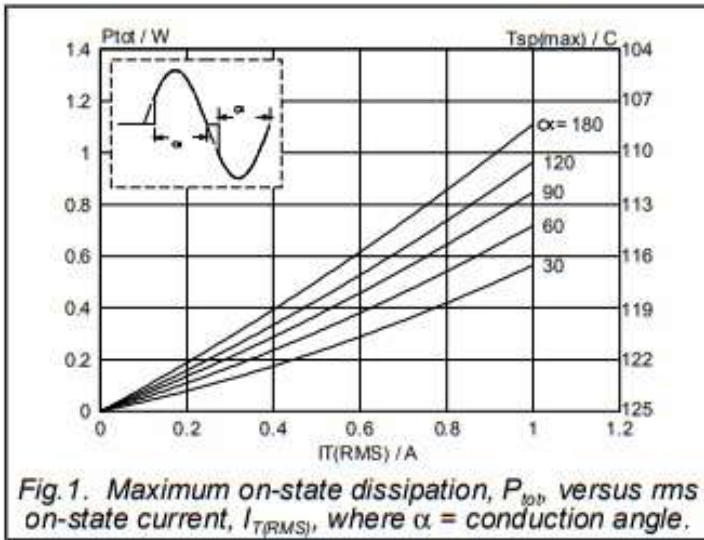
$T_j = 25\text{ }^\circ\text{C}$  unless otherwise stated

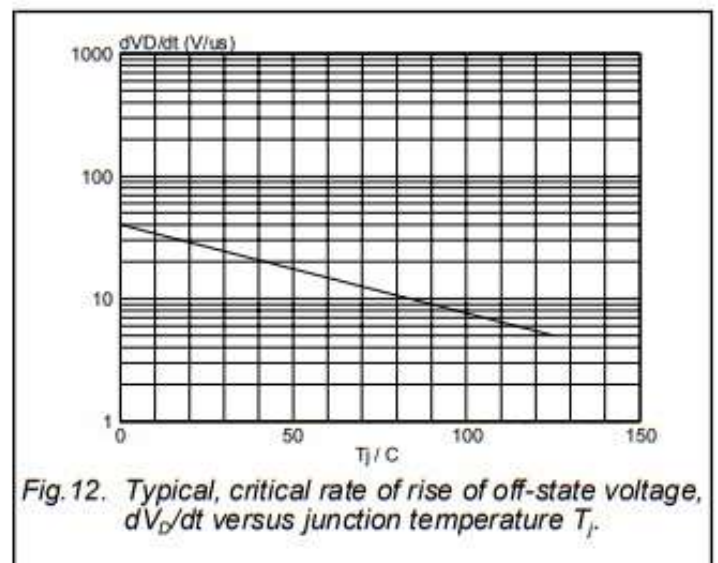
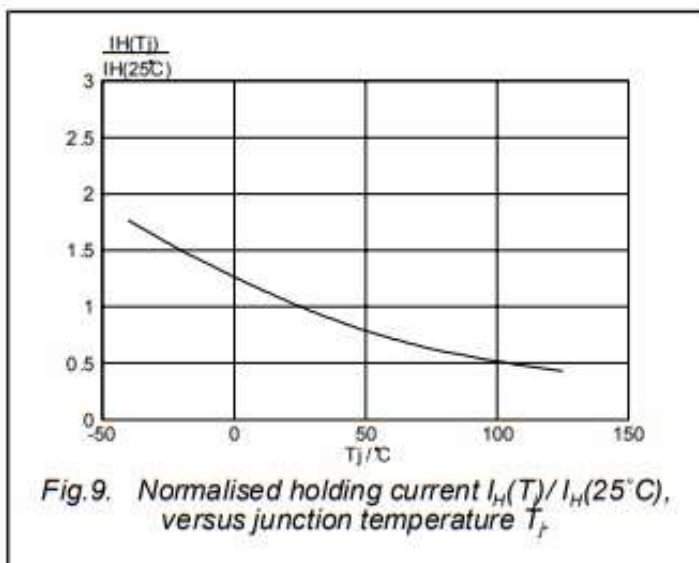
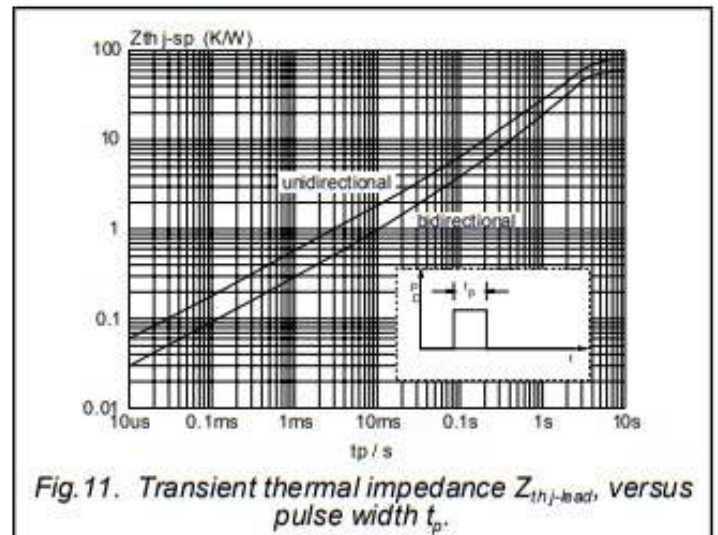
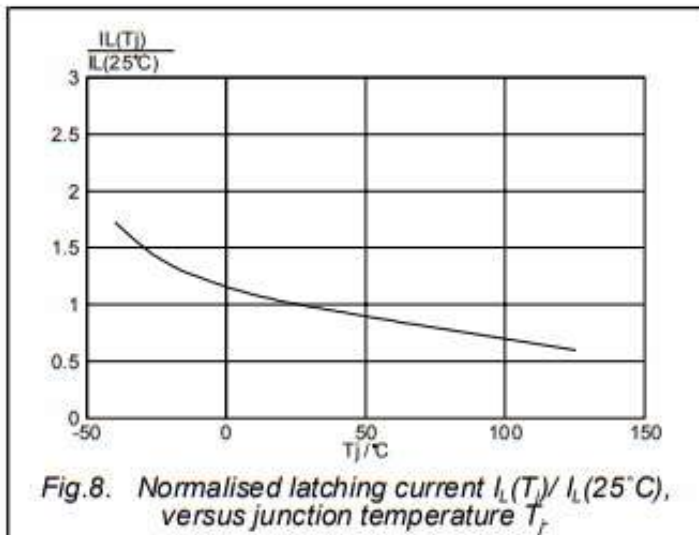
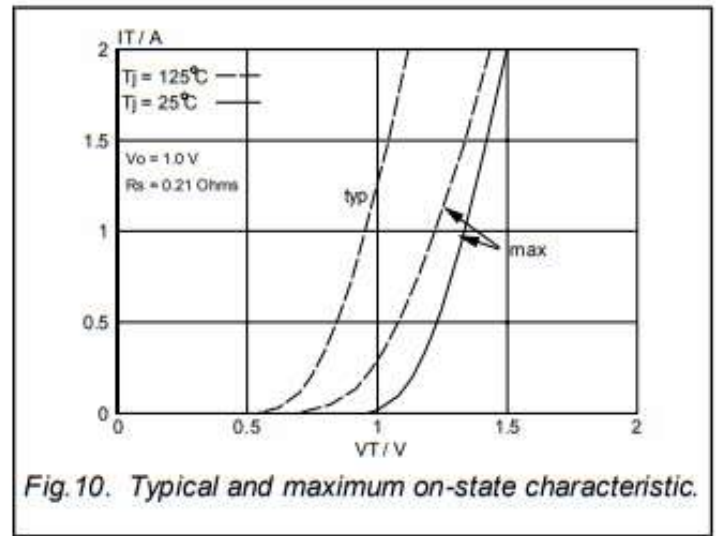
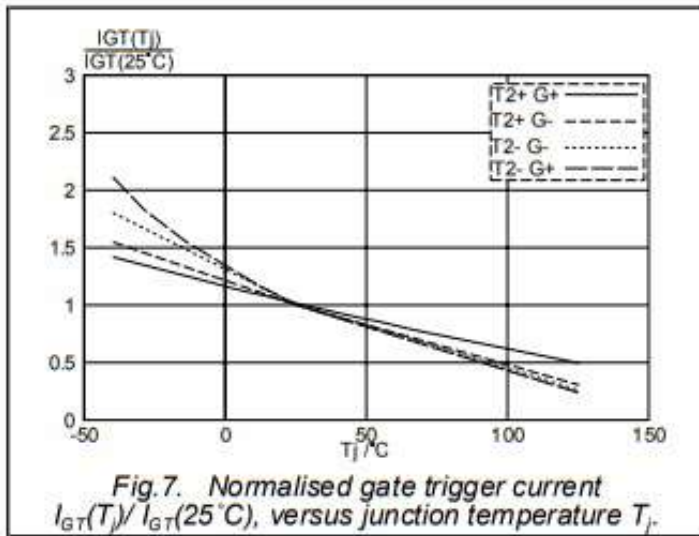
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$I_{GT}$	Gate trigger current	$V_D = 12\text{ V}; I_T = 0.1\text{ A}$				
		T2+ G+	-	0.4	3	mA
		T2+ G-	-	1.3	3	mA
		T2- G-	-	1.4	3	mA
		T2- G+	-	3.8	7	mA
$I_L$	Latching current	$V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$				
		T2+ G+	-	1.2	5	mA
		T2+ G-	-	4.0	8	mA
		T2- G-	-	1.0	5	mA
		T2- G+	-	2.5	8	mA
$I_H$	Holding current	$V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$	-	1.3	5	mA
$V_T$	On-state voltage	$I_T = 2.0\text{ A}$	-	1.2	1.5	V
$V_{GT}$	Gate trigger voltage	$V_D = 12\text{ V}; I_T = 0.1\text{ A}$	-	0.7	1.5	V
		$V_D = 400\text{ V}; I_T = 0.1\text{ A}; T_j = 125\text{ }^\circ\text{C}$	0.2	0.3	-	V
$I_D$	Off-state leakage current	$V_D = V_{DRM(max)}; T_j = 125\text{ }^\circ\text{C}$	-	0.1	0.5	mA

### DYNAMIC CHARACTERISTICS

$T_j = 25\text{ }^\circ\text{C}$  unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$dV_D/dt$	Critical rate of rise of off-state voltage	$V_{DM} = 67\% V_{DRM(max)}; T_j = 125\text{ }^\circ\text{C};$ exponential waveform; $R_{GK} = 1\text{ k}\Omega$	5	15	-	V/ $\mu\text{s}$
$t_{gt}$	Gate controlled turn-on time	$I_{TM} = 1.5\text{ A}; V_D = V_{DRM(max)}; I_G = 0.1\text{ A};$ $dI_G/dt = 5\text{ A}/\mu\text{s}$	-	2	-	$\mu\text{s}$





**MECHANICAL DATA**

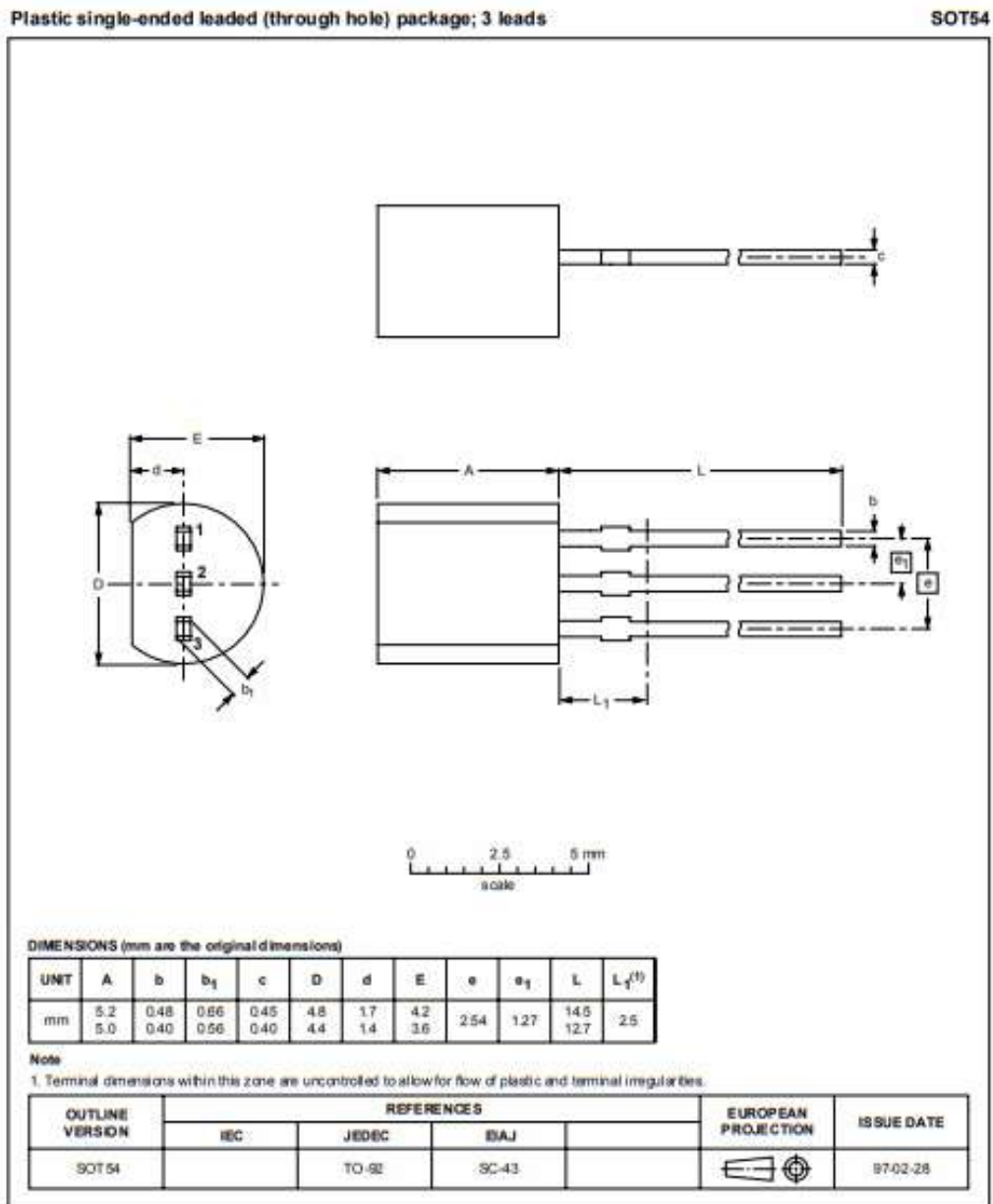


Fig.13. TO92 ; plastic envelope; Net Mass: 0.2 g