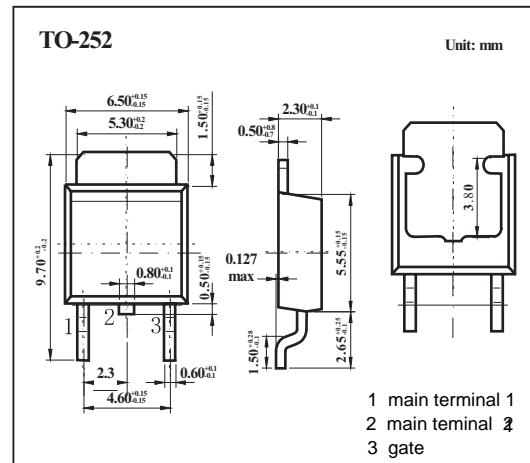
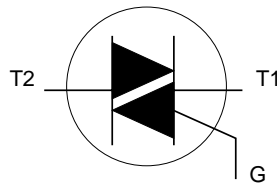


## Triacs

### BT137-500

#### ■ Features

- Repetitive peak off-state voltages : $V_{DRM}=500V$
- RMS on-state current : $I_T(RMS)=8A$
- Non-repetitive peak on-state current : $I_{TSM}=65A$



#### ■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Testconditions	Rating	Unit
Repetitive peak off-state voltages	$V_{DRM}$		500	V
RMS on-state current	$I_T(RMS)$	full sine wave; $T_{mb} \leq 102^\circ C$	8	A
Non-repetitive peak on-state current	$I_{TSM}$	full sine wave; $T_j = 25^\circ C$ prior to surge		
		$t = 20$ ms	65	A
		$t = 16.7$ ms	71	A
I <sup>2</sup> t for fusing	$I^2t$	$t = 10$ ms	21	A <sup>2</sup> S
Repetitive rate of rise of on-state current after triggering	$dI/dt$	$I_{TM} = 12$ A; $I_G = 0.2$ A; $dI_G/dt = 0.2$ A/ $\mu$ s		
		T2+ G+	50	A/ $\mu$ s
		T2+ G-	50	A/ $\mu$ s
		T2- G-	50	A/ $\mu$ s
		T2- G+	10	A/ $\mu$ s
Peak gate current	$I_{GM}$		2	A
Peak gate voltage	$V_{GM}$		5	V
Peak gate power	$P_{GM}$		5	W
Average gate power	$P_{G(AV)}$	over any 20 ms period	0.5	W
Storage temperature	$T_{stg}$		-40 to 150	$^\circ C$
Operating junction temperature	$T_j$		125	$^\circ C$
Thermal resistance junction to mounting base	$R_{th j-mb}$	full cycle	2.0	K/W
		half cycle	2.4	K/W
Thermal resistance junction to ambient	$R_{th j-a}$	in free air	60	K/W

## BT137-500

■ Electrical Characteristics  $T_a = 25\text{ }^\circ\text{C}$ 

Parameter	Symbol	Testconditions	Min			Typ	Max			Unit		
			... E	... F	... G		... E	... F	... G			
Gate trigger current	$I_{GT}$	$V_D = 12\text{ V}; I_T = 0.1\text{ A}$					T2+ G+	6	35	25	50	mA
							T2+ G-	8	35	25	50	mA
							T2- G-	12	35	25	50	mA
							T2- G+	30	70	70	100	mA
Latching current	$I_L$	$V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$					T2+ G+	8	30	30	45	mA
							T2+ G-	17	45	45	60	mA
							T2- G-	6	30	30	45	mA
							T2- G+	8	45	45	60	mA
Holding current	$I_H$	$V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$				5	20	20	40	mA		
On-state voltage	$V_T$	$I_T = 10\text{ A}$				1.3	1.70			V		
Gate trigger voltage	$V_{GT}$	$V_D = 12\text{ V}; I_T = 0.1\text{ A}$				0.7	1.5			V		
		$V_D = 400\text{ V}; I_T = 0.1\text{ A}; T_J = 125\text{ }^\circ\text{C}$	0.25			0.4				V		
Off-state leakage current	$I_D$	$V_D = V_{DRM(max)}; T_J = 125\text{ }^\circ\text{C}$				0.1	0.5			mA		
Critical rate of rise of off-state voltage	$dV_D/dt$	$V_{DM} = 67\% V_{DRM(max)}; T_J = 125\text{ }^\circ\text{C};$ exponential waveform; gate open circuit	100	50	200	250				V/ $\mu\text{s}$		
Critical rate of change of commutating voltage	$dV_{com}/dt$	$V_{DM} = 400\text{ V}; T_J = 95\text{ }^\circ\text{C}; I_{T(RMS)} = 8$ A; $dI_{com}/dt = 3.6\text{ A/ms}$ ; gate open circuit			10	20				V/ $\mu\text{s}$		
Gate controlled turn-on time	$t_{gt}$	$I_{TM} = 12\text{ A}; V_D = V_{DRM(max)}; I_G = 0.1$ A; $dI_G/dt = 5\text{ A}/\mu\text{s}$ ;				2				$\mu\text{s}$		