KERSMI ELECTRONIC CO.,LTD. **600V**

Description

This MOSFETS use advanced trench technology and design to provide excellent RDS(on) with low gate charge. It can be used in a wide variety of applications.

Features

BVDSS	ID
600V	1A

1) Low gate charge.
2) Green device available.
3) Advanced high cell denity trench technology for ultra RDS(ON)
4) Excellent package for good heat dissipation.

TO-92

Absolute Maximum Ratings T_C=25℃,unless otherwise noted

Thermal Characteristics

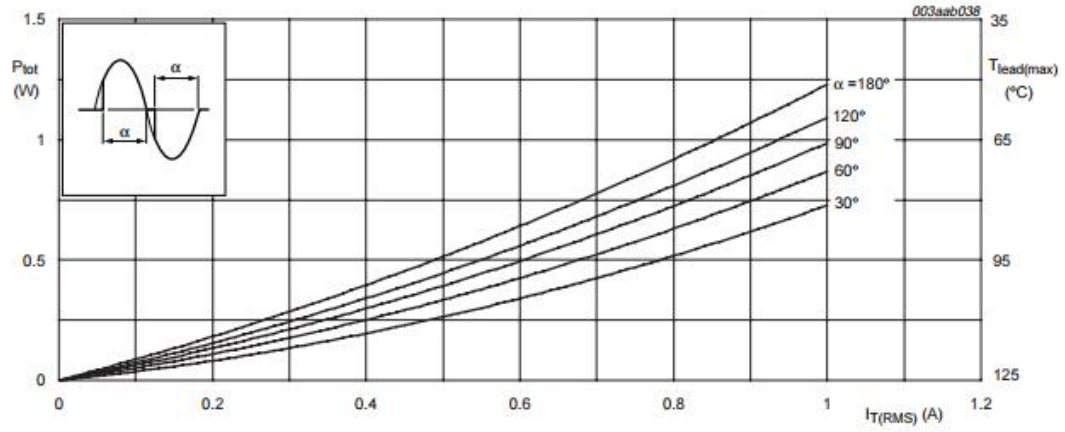
Symbol	Parameter	Ratings	Units
$R_{\theta JC}$	Thermal Resistance ,Junction to Case1	—	℃/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient1	—	

Package Marking and Ordering Information

Part NO.	Marking	Package
BT131-600E	BT131-600E	TO-92

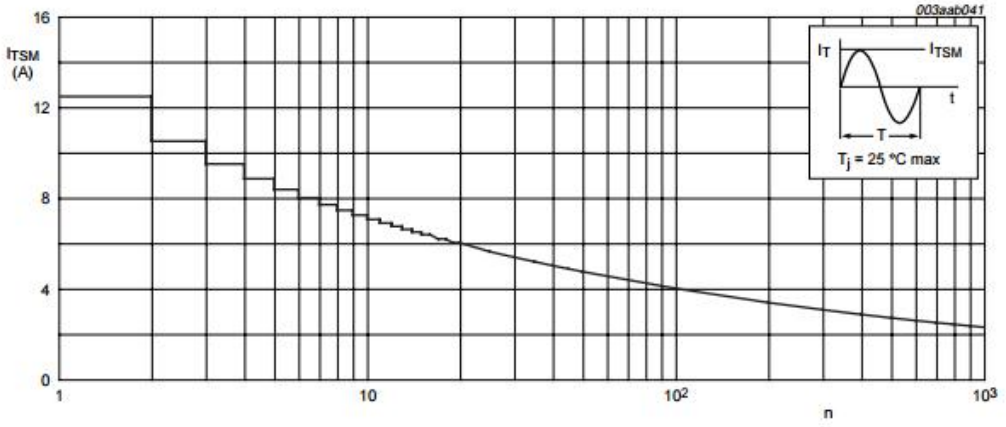
T_j = 25 °C unless otherwise stated.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static characteristics						
I_{GT}	gate trigger current	V_D = 12 V; I_T = 100 mA; see Figure 8				
		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 V; I_{GT} = 100 mA; see Figure 10				
		T2+ G+	-	1.2	5	mA
		T2+ G–	-	4	8	mA
		T2– G–	-	1	5	mA
		T2– G+	-	2.5	8	mA
I_H	holding current	V_D = 12 V; I_{GT} = 100 mA; see Figure 11	-	1.3	5	mA
V_T	on-state voltage	I_T = 1.4 A; see Figure 9	-	1.2	1.5	V
V_{GT}	gate trigger voltage	I_T = 10 mA; gate open circuit; see Figure 7				
		V_D = 12 V; I_{GT} = 100 mA	-	0.7	1.5	V
		V_D = 400 V; I_{GT} = 100 mA; T_j = 125 °C	0.2	0.3	-	V
I_D	off-state current	$V_D = V_{DRM(max)}$; T_j = 125 °C	-	0.1	0.5	mA
Dynamic characteristics						
dV_D/dt	rate of rise of off-state voltage	V_{DM} = 67 % $V_{DRM(max)}$; T_j = 125 °C; exponential waveform; R_{GK} = 1 kΩ; see Figure 12	10	20	-	V/µs
dV_{com}/dt	rate of change of commutating current	V_{DM} = 400 V; T_j = 125 °C; dI_{com}/dt = 0.5 A/ms	2	-	-	V/µs
t_{gt}	gate-controlled turn-on time	I_{TM} = 1.5 A; $V_D = V_{DRM(max)}$; I_G = 100 mA; dI_G/dt = 5 A/µs	-	2	-	µs



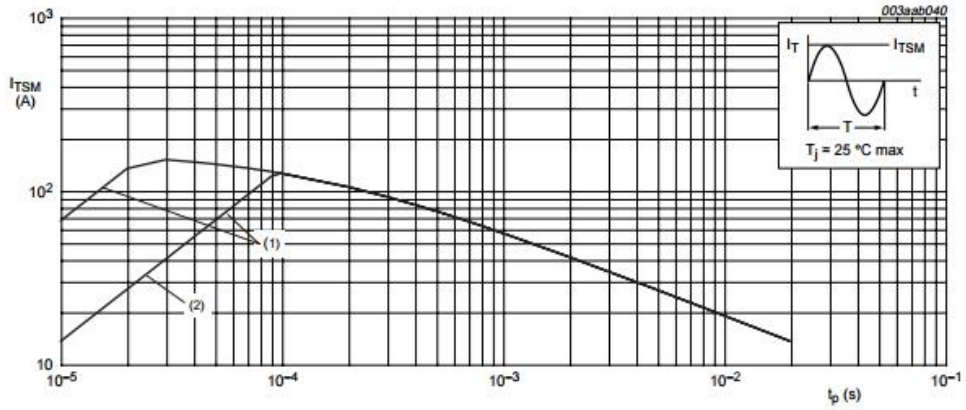
a = form factor = $I_{T(RMS)}/I_{T(AV)}$

Fig 1. Total power dissipation as a function of average on-state current; maximum values



f = 50 Hz

Fig 2. Non-repetitive peak on-state current as a function of the number of sinusoidal current cycles; maximum values

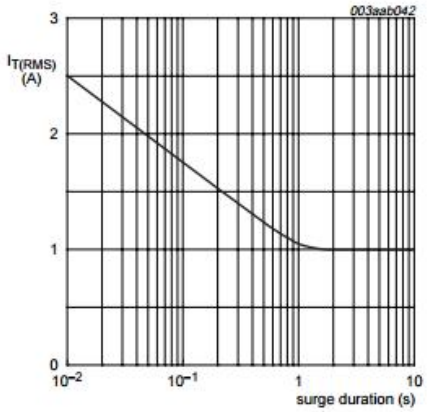


$t_p \leq 20$ ms

(1) dI_T/dt limit

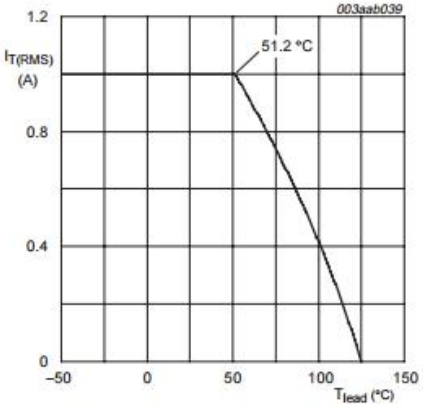
(2) T2– G+ quadrant

Fig 3. Non-repetitive peak on-state current as a function of pulse width for sinusoidal currents; maximum values



f = 50 Hz; $T_{lead} \leq 51.2$ °C

Fig 4. RMS on-state current as a function of surge duration, for sinusoidal currents; maximum values



(1) $T_{lead} = 51.2$ °C

Fig 5. RMS on-state current as a function of lead temperature; maximum values