IXYS
A Littelfuse Technology

Breakover Diode Gen[1]
(BOD1)

V_{BO} = 600-1000 V
I_{AVM} =   0.9 A

V_{BO} [V]	Standard Types
600 ±50	IXBOD1-06
700 ±50	IXBOD1-07
800 ±50	IXBOD1-08
900 ±50	IXBOD1-09
1000 ±50	IXBOD1-10
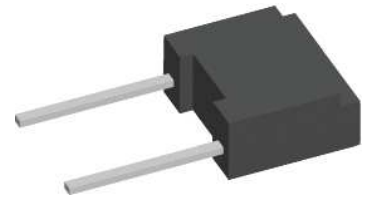
Backside: isolated

A o———|>———o K

Features / Advantages:
• Fast turn on
• Low temperature dependance
• Low leakage current

Applications:
• High voltage circuit protection
• Transient voltage protection
• Trigger device
• Power pulse generators
• Lightning and arcing protection
• Energy discharge circuits
• Battery overvoltage protection
• Solar array protection

Package: FP-Case
• Industry standard outline
• RoHS compliant
• Epoxy meets UL 94V-0
• Soldering pins for PCB mounting
• Base plate: Plastic overmolded tab
• Reduced weight

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BOD1			Ratings			
Symbol	Definitions	Conditions	min.	typ.	max.	
I_D	drain current	$V_D = 0.8 \cdot V_{BO}$ $\qquad$ $T_{VJ} = 125°C$			20	µA
V_{BO}	breakover voltage	$V_{BO} (T_{VJ}) = V_{BO, 25°C} [1 + K_T (T_{VJ} - 25°C)]$				V
I_{RMS}	RMS current	f = 50 Hz $\qquad$ $T_{amb} = 50°C$ pins soldered to printed circuit (conductor 0.035x2mm)			1.4	A
I_{FAVM}	maximum average forward current				0.9	A
I_{SM}	maximum pulsed source current	$t_p = 0.1$ ms; non repetitive $\qquad$ $T_{amb} = 50°C$			200	A
I^2t	I²t value for fusing	$t_p = 0.1$ ms $\qquad$ $T_{amb} = 50°C$			2	A²s
K_T K_P	temperature coefficient of V_{BO} coefficient for energy per pulse EP (material constant)			$2 \cdot 10^{-3}$ 700		K⁻¹ K/Ws
R_{thJA}	thermal resistance junction to ambient	natural convection with air speed 2 m/s			60 45	K/W K/W
I_{BO}	breakover current	$T_{VJ} = 25°C$			15	mA
I_H	holding current	$T_{VJ} = 25°C$			30	mA
V_H	holding voltage	$T_{VJ} = 25°C$	4		8	V
$(dv/dt)_{cr}$	critical rate of rise of voltage	$V_D = 0.67 \cdot (V_{BO} +100 V)$ $\qquad$ $T_{VJ} = 50°C$			1000	V/µs
$(di/dt)_{cr}$	critical rate of rise of curent	$V_D = V_{BO}$; $I_T = 80$ A; f = 50 Hz $\qquad$ $T_{VJ} = 125°C$			200	A/µs
t_q	turn-off time	$V_D = 0.67 \cdot V_{BO}$; $V_R = 0$ V; $I_T = 80$ A $\qquad$ $T_{VJ} = 125°C$ $dv/dt_{(lin.)} = 200$ V/µs; di/dt = -10 A/µs		150		µs
V_T	forward voltage drop	$I_T = 5$ A $\qquad$ $T_{VJ} = 125°C$			1.7	V
V_{T0} r_T	threshold voltage slope resistance	for power-loss calculation only $\qquad$ $T_{VJ} = 125°C$			1.1 0.12	V Ω

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Package	FP-Case			Ratings	
Symbol	**Definitions**	**Conditions**	**min.**	**typ.**	**max.**	
T$_{amb}$	*ambient temperature (cooling medium)*		-40		125	°C
T$_{stg}$	*storage temperature*		-40		125	°C
T$_{VJM}$	*maximum virtual junction temperature*		-40		125	°C
Weight				0.9		g

Product Marking
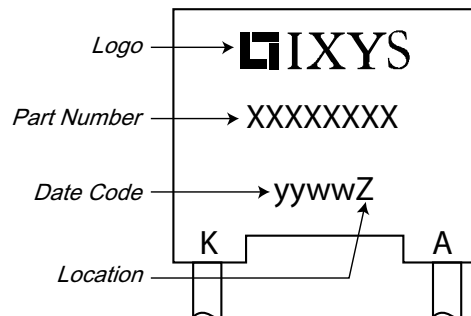
Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Ordering Code
Standard	IXBOD1-06	IXBOD1-06	Box	100	467936
Standard	IXBOD1-07	IXBOD1-07	Box	100	478873
Standard	IXBOD1-08	IXBOD1-08	Box	100	467928
Standard	IXBOD1-09	IXBOD1-09	Box	100	474940
Standard	IXBOD1-10	IXBOD1-10	Box	100	467839

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Outlines   FP-case
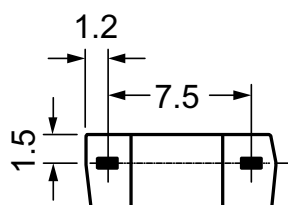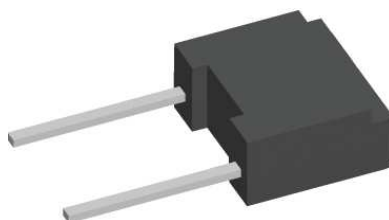
**Dimensions in mm
(1 mm = 0.0394")**

1.2

7.5

1.5

10

9

11.5

0.8

4
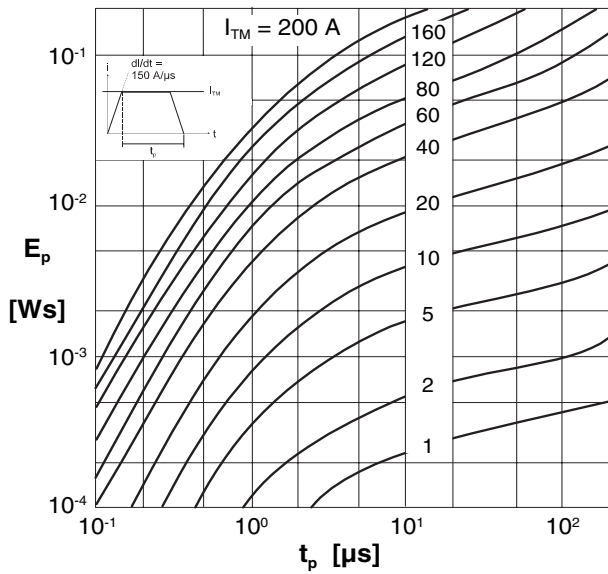
1

1.5

0.5

A ○——▷|◁—— ○ K
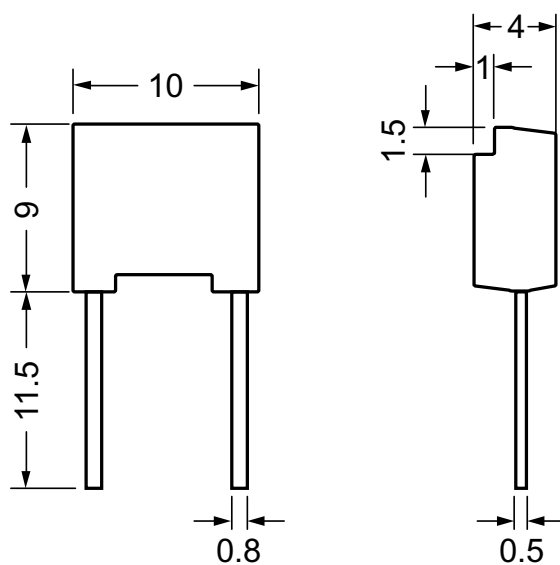
Diode

Fig. 1 Energy per pulse for trapezoidal current waveforms (see waveform definition)
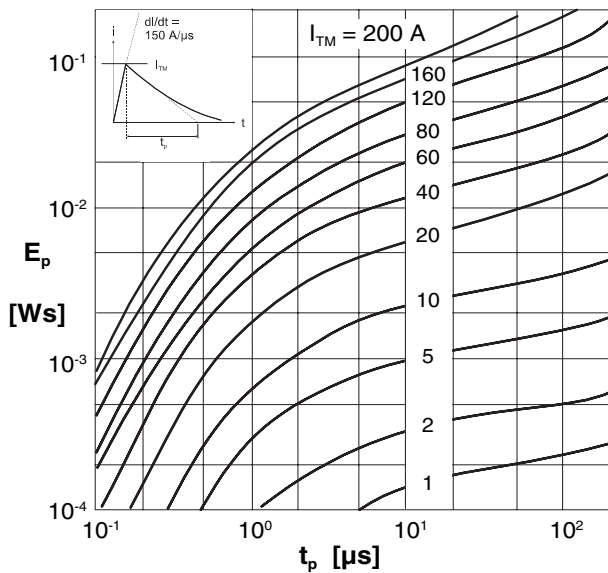

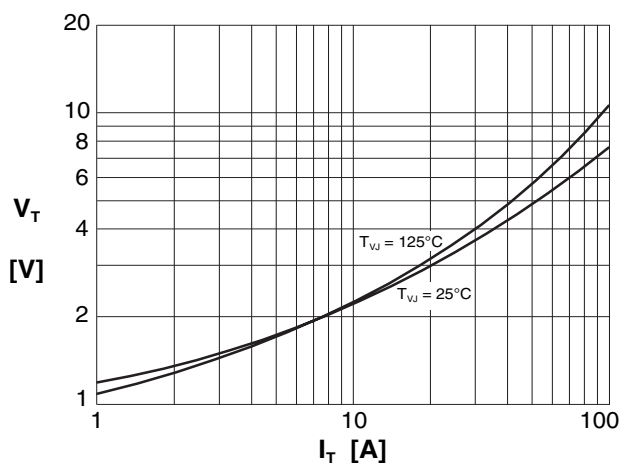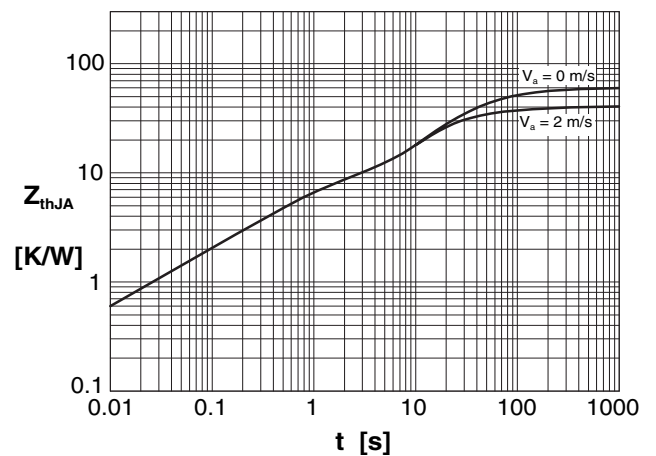Fig. 2 Energy per pulse for exponentially decaying current pulse (see waveform definition)

Fig. 3 On-state voltage

Fig. 4 Transient thermal resistance

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