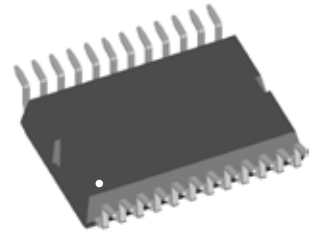
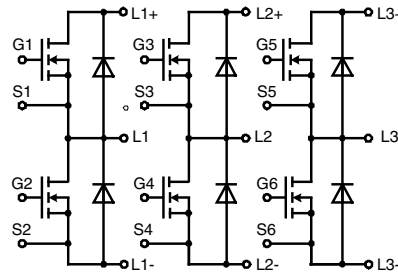


Three phase full Bridge with Trench MOSFETs in DCB isolated high current package

$$\begin{aligned}
 V_{DSS} &= 150 \text{ V} \\
 I_{D25} &= 57 \text{ A} \\
 R_{DSon \text{ typ.}} &= 17 \text{ m}\Omega
 \end{aligned}$$



MOSFETs

Symbol	Conditions	Maximum Ratings	
V_{DSS}	$T_{VJ} = 25^{\circ}\text{C to } 150^{\circ}\text{C}$	150	V
V_{GS}		± 20	V
I_{D25}	$T_C = 25^{\circ}\text{C}$	57	A
I_{D90}	$T_C = 90^{\circ}\text{C}$	45	A
I_{D110}	$T_C = 110^{\circ}\text{C}$	43	A
I_{F25}	$T_C = 25^{\circ}\text{C}$ (diode)	tbd	A
I_{F90}	$T_C = 90^{\circ}\text{C}$ (diode)	tbd	A
I_{F110}	$T_C = 110^{\circ}\text{C}$ (diode)	tbd	A

Symbol	Conditions	Characteristic Values			
(T _{VJ} = 25°C, unless otherwise specified)					
		min.	typ.	max.	
R _{DSon} ¹⁾	on chip level at V _{GS} = 10 V		17 36	22	mΩ mΩ
V _{GS(th)}	V _{DS} = 20 V; I _D = 1 mA	2.5		4.5	V
I _{DSS}	V _{DS} = V _{DSS} ; V _{GS} = 0 V		0.1	1	μA mA
I _{GSS}	V _{GS} = ± 20 V; V _{DS} = 0 V			0.2	μA
Q _g Q _{gs} Q _{gd}	V _{GS} = 10 V; V _{DS} = 65 V; I _D = 50 A		tbd tbd tbd		nC nC nC
t _{d(on)} t _r t _{d(off)} t _f		inductive load V _{GS} = 10 V; V _{DS} = 96 V I _D = 50 A; R _G = 33 Ω; T _J = 125°C	tbd tbd tbd tbd		ns ns ns ns
E _{on} E _{off} E _{recoff}			tbd tbd tbd		mJ mJ mJ
R _{thJC} R _{thJH}	with heat transfer paste (IXYS test setup)			1.0 1.3	K/W K/W

¹⁾ $V_{DS} = I_D \cdot (R_{DS(on)} + 2R_{Pin \text{ to Chip}})$

Applications

AC drives

- in automobiles
 - electric power steering
 - starter generator
- in industrial vehicles
 - propulsion drives
 - fork lift drives
- in battery supplied equipment

Features

- MOSFETs in trench technology:
 - low R_{DSon}
 - optimized intrinsic reverse diode
- package:
 - high level of integration
 - high current capability
 - aux. terminals for MOSFET control
 - terminals for soldering or welding connections
 - isolated DCB ceramic base plate with optimized heat transfer
- Space and weight savings

Source-Drain Diode

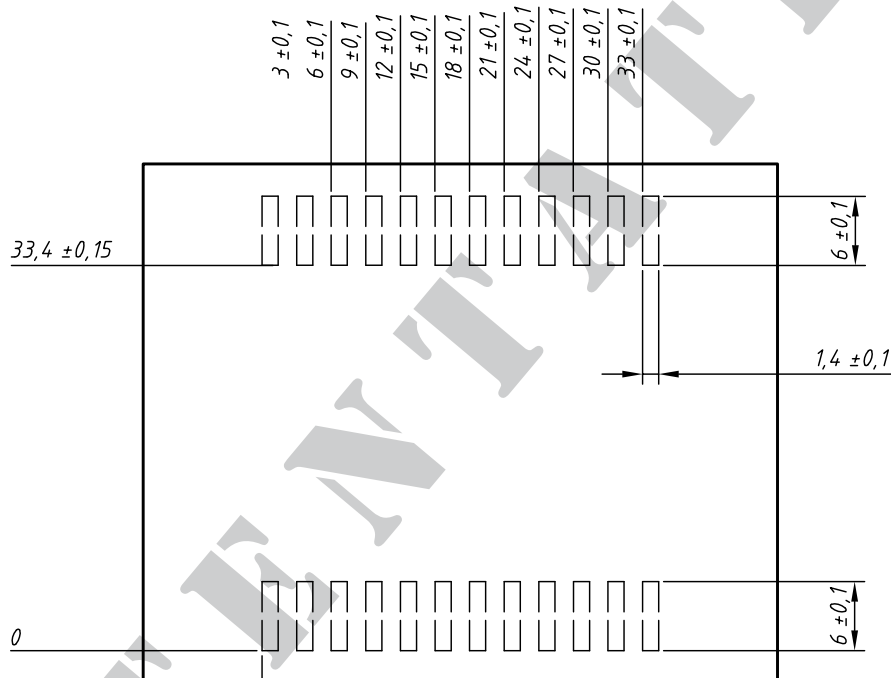
Symbol	Conditions	Characteristic Values			
		(T _J = 25°C, unless otherwise specified)			
		min.	typ.	max.	
V _{SD}	(diode) I _F = 50 A; V _{GS} = 0 V		0.9	1.2	V
t _{rr}	I _F = 50 A; -di _F /dt = 800 A/μs; V _R = 96 V		tbd		ns
Q _{RM}			tbd		μC
I _{RM}			tbd		A

Component

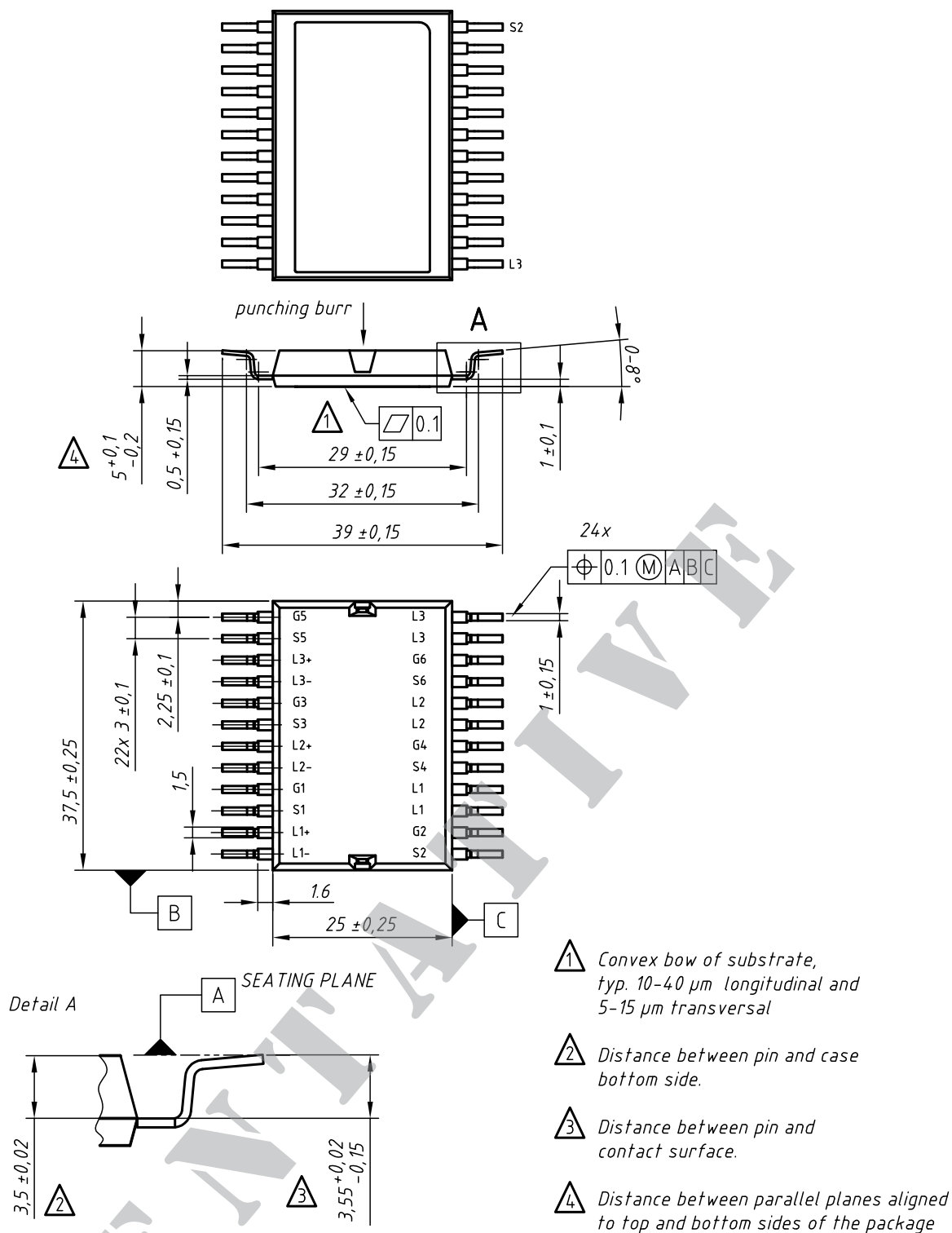
Symbol	Conditions	Maximum Ratings	
I _{RMS}	per pin in main current paths (P+, N-, L1, L2, L3) may be additionally limited by external connections 2 pins for output L1, L2, L3	75	A
T _J		-55...+175	°C
T _{stg}		-55...+125	°C
V _{ISOL}	I _{ISOL} ≤ 1 mA, 50/60 Hz, f = 1 minute	1000	V~
F _C	mounting force with clip	50 - 250	N

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
R _{pin to chip} ¹⁾			tbd	mΩ
C _P	coupling capacity between shorted pins and back side metallization		160	pF
Weight			25	g

¹⁾ V_{DS} = I_D · (R_{DS(on)} + 2R_{Pin to Chip})

Remarks:

- 1) pin layout / dimensions are conditionally
- 2) soldering paste thickness: 200μm



contact pin:

- galv. tin plating, per pin side: Sn 10...25 μm, undercoating Ni 0,2...1 μm
- stamping edges may be free of tin
- punching burr: $\leq 0,05$ mm

Leads	Ordering	Part Name & Packing Unit Marking	Part Marking	Delivering Mode	Base Qty.	Ordering Code
SMD	Standard	GMM 3x60-015X2 - SMD	GMM 3x60-015X2	Blister	28	510635

IXYS reserves the right to change limits, test conditions and dimensions.

20110307

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