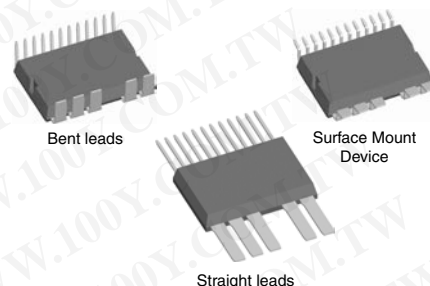
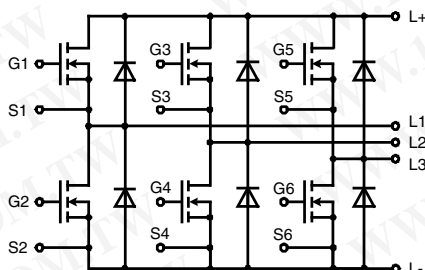


Three phase full Bridge with Trench MOSFETs in DCB isolated high current package

$V_{DSS} = 40\text{ V}$
 $I_{D25} = 190\text{ A}$
 $R_{DSon\ typ.} = 2.0\text{ m}\Omega$

Preliminary data



MOSFETs			
Symbol	Conditions	Maximum Ratings	
V_{DSS}	$T_{VJ} = 25^{\circ}\text{C to } 150^{\circ}\text{C}$	40	V
V_{GS}		± 20	V
I_{D25}	$T_C = 25^{\circ}\text{C}$	190	A
I_{D90}	$T_C = 90^{\circ}\text{C}$	145	A
I_{F25}	$T_C = 25^{\circ}\text{C (diode)}$	125	A
I_{F90}	$T_C = 90^{\circ}\text{C (diode)}$	80	A

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 300 A max.
 - aux. terminals for MOSFET control
 - terminals for soldering or welding connections
 - isolated DCB ceramic base plate with optimized heat transfer
- Space and weight savings

Symbol	Conditions	Characteristic Values			
		(T _{VJ} = 25°C, unless otherwise specified)			
		min.	typ.	max.	
R_{DSon}	on chip level at $V_{GS} = 10\text{ V}$		2.0	2.6	mΩ
			3.2		mΩ
$V_{GS(th)}$	$V_{DS} = 20\text{ V}; I_D = 1\text{ mA}$	2		4	V
I_{DSS}	$V_{DS} = V_{DSS}; V_{GS} = 0\text{ V}$		0.1	1	μA
					mA
I_{GSS}	$V_{GS} = \pm 20\text{ V}; V_{DS} = 0\text{ V}$			0.2	μA
Q_g	$V_{GS} = 10\text{ V}; V_{DS} = 14\text{ V}; I_D = 25\text{ A}$		94		nC
Q_{gs}			18		nC
Q_{gd}			29		nC
$t_{d(on)}$	$V_{GS} = 10\text{ V}; V_{DS} = 30\text{ V}$ $I_D = 25\text{ A}; R_G = 10\ \Omega$ inductive load		40		ns
t_r			85		ns
$t_{d(off)}$			140		ns
t_f			90		ns
E_{on}			tbd		
E_{off}		tbd			mJ
E_{recoff}		tbd			mJ
R_{thJC}	with heat transfer paste			0.9	K/W
R_{thJH}			1.2		K/W

Package options

- 3 lead forms available
 - straight leads (SL)
 - SMD lead version (SMD)
 - bent leads (BL)

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 勝特力电子(上海) 86-21-34970699
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[Http://www.100y.com.tw](http://www.100y.com.tw)

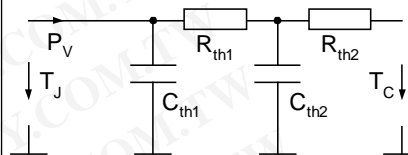
Source-Drain Diode

Symbol	Conditions	Characteristic Values			
		min.	typ.	max.	
($T_J = 25^\circ\text{C}$, unless otherwise specified)					
V_{SD}	(diode) $I_F = 110\text{ A}$; $V_{GS} = 0\text{ V}$		1.0	1.6	V
t_{rr}	$I_F = 20\text{ A}$; $-di_F/dt = 100\text{ A}/\mu\text{s}$; $V_R = 20\text{ V}$		70		ns
Q_{RM}			tbd		μC
I_{RM}				tbd	

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	300	A
T_{VJ}		-40...+175	$^\circ\text{C}$
T_{stg}		-55...+125	$^\circ\text{C}$
V_{ISOL}	$I_{ISOL} \leq 1\text{ mA}$, 50/60 Hz, $f = 1\text{ minute}$	1000	V~
F_C	mounting force with clip	50 - 250	N

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
$R_{pin\ to\ chip}$	with heatsink compound		0.6	$\text{m}\Omega$
C_p	coupling capacity between shorted pins and mounting tab in the case		160	pF
Weight	typ.		25	g

Equivalent Circuits for Simulation
Thermal Response


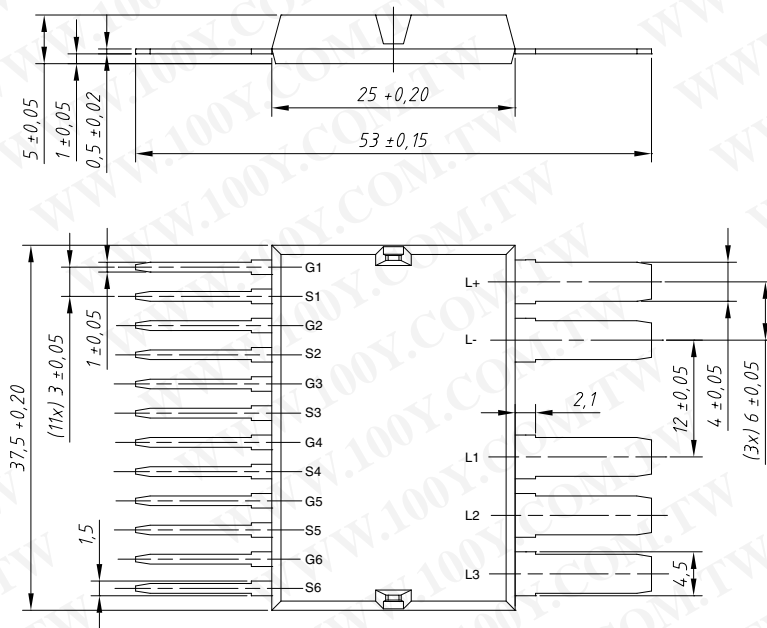
junction - case (typ.)

$$C_{th1} = \text{tbd J/K}; R_{th1} = \text{tbd K/W}$$

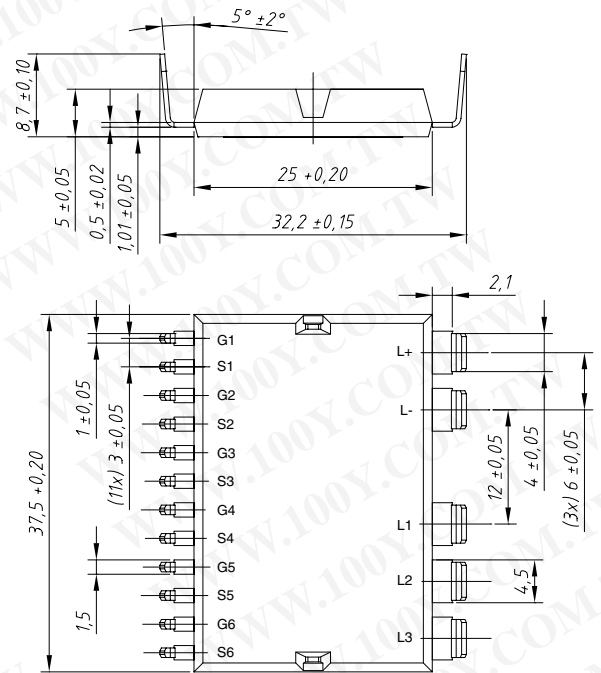
$$C_{th2} = \text{tbd J/K}; R_{th2} = \text{tbd K/W}$$

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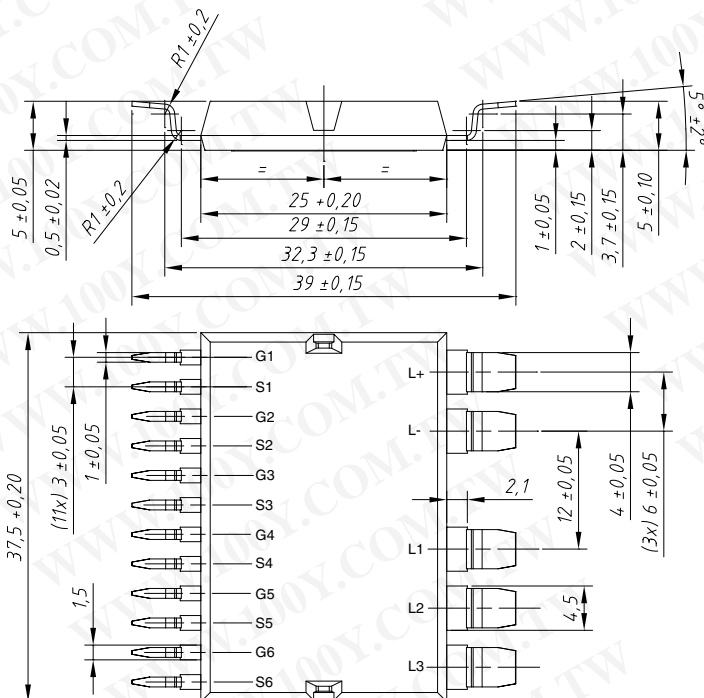
Straight Leads GWM 220-004P3-SL



Bent Leads GWM 220-04P3-BL



Surface Mount Device GWM 220-04P3-SMD



Leads	Ordering Code & Packing Unit Marking	Part Marking	Code Key
Straight	GWM 220-004P3 - SL	GWM 220-004P3	503 169
SMD	GWM 220-004P3 - SMD	GWM 220-004P3	503 176
Bent	GWM 220-004P3 - BL	GWM 220-004P3	contact factory

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