MDW0416EB

Common-Drain Dual N-Channel Trench MOSFET 24V

General Description

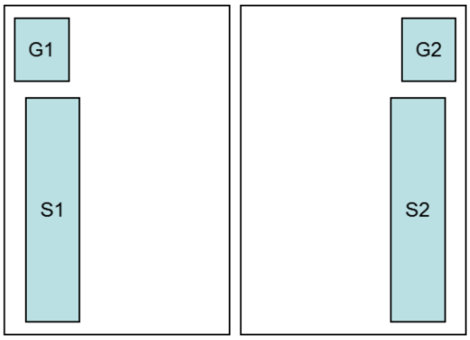
The MDW0416EB uses advanced MagnaChip's MOSFET Technology, which provides high performance in on-state resistance, fast switching performance and excellent quality. Excellent low $R_{DS(ON)}$, low gate charge and operation for Battery Application.

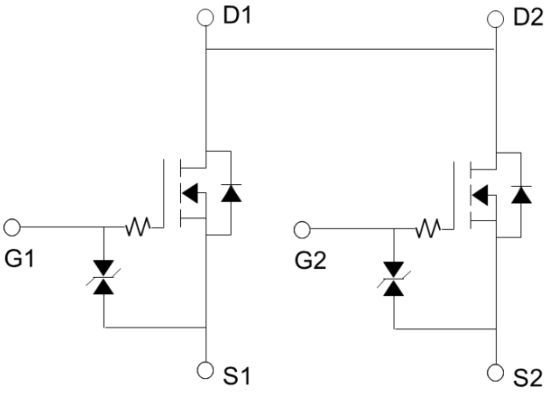
Features

- V_{DS} = 24V
- Drain-Source ON Resistance;
  $R_{DS(ON)}$ < 7.2mΩ @ V_{GS} = 3.9V
  $R_{DS(ON)}$ < 10.2mΩ @ V_{GS} = 3.0V

Applications

- Portable Battery Protection Module





Chip Layout
(Drain is the backside of the wafer (TOP View))

Absoloute Maximun Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Units
Drain-Source Voltage	V_{DSS}	24	V
Gate-Source Voltage	V_{GSS}	±12	V
Junction and Storage Temperature Range	T_J, T_{stg}	-55~150	°C

Electrical Characteristics (Ta =25^{o}C)

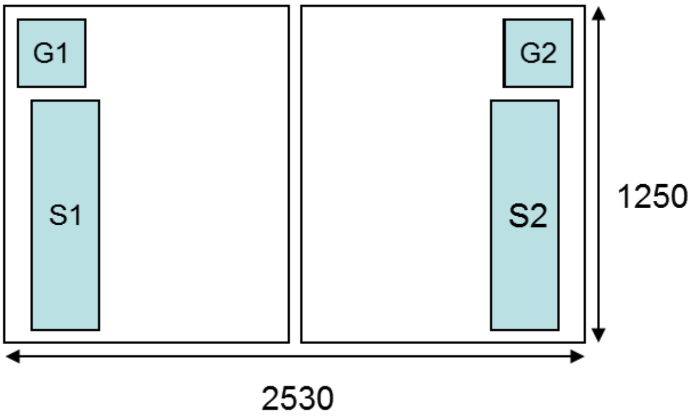
Characteristics	Symbol	Test Condition	Min	Typ	Max	Units
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D = 250μA, V_{GS} = 0V	24		-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.5	1.0	1.5	
Drain Cut-Off Current	I_{DSS}	V_{DS} = 20V, V_{GS} = 0V	-	-	1	μA
Gate Leakage Current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V	-	-	10	
Drain-Source ON Resistance	$R_{DS(ON)}$	V_{GS} = 3.9V, I_D = 3.0A		6.4	7.2	mΩ
		V_{GS} = 3.0V, I_D = 3.0A		8.0	10.2	
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	V_{SD}	I_S = 1.0A, V_{GS} = 0V	-	0.7	1.0	V

Notes :

1. The device current rating is derived from its thermal resistance and from the number and diameter of bonding wires. The testing current at wafer level is set only for ease of testing. Actual package current ratings can be much higher.

2. No SOA curves are provided because they are dependent on package thermal resistance.

Die Layout and Construction



Contents	Value
Wafer Substrate	N-type
Wafer Thickness	145±10 ㎛
Metal (Top)	Al (4.5±0.3 ㎛)
Metal (Back)	V/Ni/Ag
Passivation Layer	Yes
Die Size (with Scribe Lane)	2530×1250 ㎛ ^{2}
Scribe lane width	60 ㎛
Cell type	Stripe Cell
Gate Pad Size	164 x 152 ㎛ ^{2}
Gap between Die	7 ㎛

DISCLAIMER:

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