

SEMITRONICS CORP.

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SES838

30 Amp 200 Volt
 Three Phase Mosfet Bridge

FEATURES

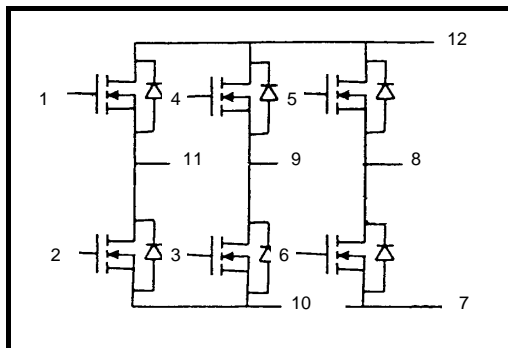
- Hermetically Sealed Case
- Dual In-Line Package
- 30 Ampere Output
- Low RDS(on)
- Fast Switching
- Hi-Rel Screening

APPLICATIONS

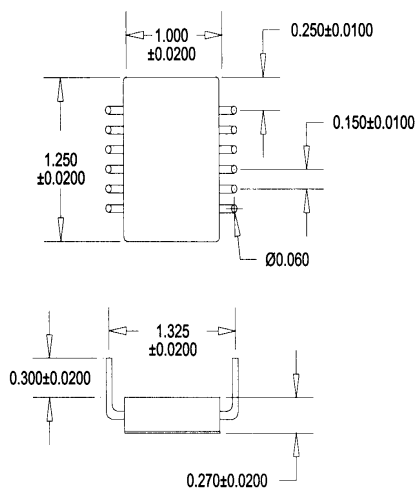
- High Reliability Power Supplies
- Switching Applications
- Motor Control
- Inverters

DESCRIPTION

Semitronics SES838 is a 30 Amp, 200 Volt Three Phase Mosfet Bridge Assembly packaged in a 12 Pin, Dual In-Line Hermetically sealed case geared for Hi-Rel and Military Applications. Rugged Construction, Low on-state resistance and superior switching characteristics provide a high level of circuit performance. Included Military 883 screening assures a higher degree of reliability.



Mechanical Dimensions



ELECTRICAL CHARACTERISTICS

Parameter	Minimum	Maximum	Units
Continuous Drain Current I_D @ $T_c = 25^\circ\text{C}$, $V_{GS} @ 10\text{V}$		30	A
Continuous Drain Current I_D @ $T_c = 100^\circ\text{C}$, $V_{GS} @ 10\text{V}$		19	A
Pulse Drain Current I_{DM} @ $T_c = 25^\circ\text{C}$		120.	A
Drain to Source Breakdown Voltage $V_{(BR)DSS}$ @ $T_j = 25^\circ\text{C}$, $V_{GS} = 0\text{V}$, $I_D = 250\mu\text{A}$	200		V
Gate-to-Source Voltage V_{GS} @ $T_j = 25^\circ\text{C}$		±20	V
Gate-Source Threshold Voltage $V_{GS(th)}$ @ $T_j = 25^\circ\text{C}$, $V_{DS} = V_{GS}$, $I_D = 250\mu\text{A}$	2.0	4.0	V
Static Drain-to-Source On-Resistance $R_{DS(on)}$ @ $T_c = 25^\circ\text{C}$, $V_{GS} = 10\text{V}$, $I_D = 18\text{A}$		0.085	Ω

ELECTRICAL CHARACTERISTICS @ T_j = 25°C (unless otherwise indicated)

Parameter	Min.	Typ.	Max.	Units	Conditions
Drain-to-Source Leakage Current I _{DSS}	—	—	25	μA	V _{DS} = 200V, V _{GS} = 0V
	—	—	250		V _{DS} = 160V, V _{GS} = 0V, T _j = 125°C
Gate-to-Source Forward Leakage I _{GSS}	—	—	100	nA	V _{GS} = 20V, T _c = 25°C
Gate-to-Source Forward Leakage I _{GSS}	—	—	-100		V _{GS} = -20V, T _c = 25°C
Turn-on-Delay Time t _{d(on)}	—	16	—	ns	V _{DD} = 100V V _{GS} = 10V I _D = 30A R _G = 6.2 ohms
Rise Time t _r	—	86	—		
Turn-Off-Delay Time t _{d(off)}	—	70	—		
Fall time t _f	—	62	—		
Input Capacitance C _{iss}	—	2800	—	pF	V _{GS} = 0V V _{DS} = 25V f = 1.0 MHZ
Output Capacitance C _{oss}	—	780	—		
Reverse Transfer Capacitance C _{rss}	—	250	—		
Thermal Resistance R _{θJC}	—	—	0.75	°C/W	
Operating Junction Temperature T _j	-55	—	150	°C	
Storage Junction Temperature T _j	-55	—	150		

Source-Drain Diode Ratings and Characteristics

Parameter	Min.	Typ.	Max.	Units	Conditions
Forward Voltage V _{SD}	—	—	2.0	V	I _S = 30A, V _{GS} = 0V, T _j = 25°C
Continuous Forward Current I _S	—	—	30	A	T _c = 25°C
Reverse Recovery Time t _{rr}	—	360	540	ns	I _F = 15A, T _c = 25°C, di/dt = 100A/μs

MIL-STD-883 Screening (Reference: MIL-PRF-38534, Revision C, Class H)

SCREEN	MIL-STD-883 METHOD	CONDITIONS
1 Internal Visual	2017	Condition B
2 Temperature Cycling	1010	Condition C
3 Constant Acceleration	2001	Condition A (min) Y1 orientation only
4 Pre burn in Electrical Parameters	—	Per device detailed specification
5 Burn-in	1015	160 Hours at 125°C minimum
6 Final Electrical Parameters	—	Per device detailed specification
7 PDA Calculation	—	10%
8 Fine & Gross Seal	1014	—
9 External Visual, Mechanical	2009	—

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