

CMSBN8208A-HF

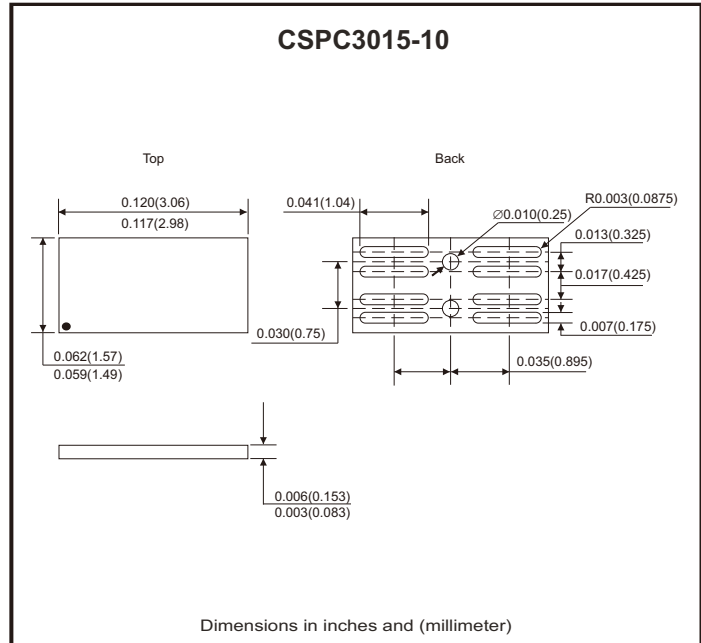
Dual N-Channel
RoHS Device
Halogen Free

Features

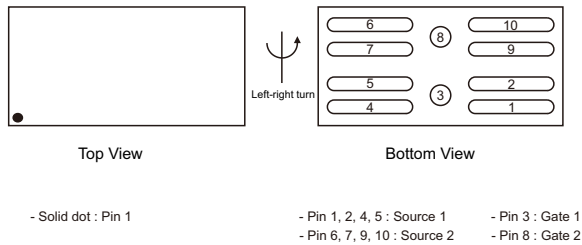
- It is ESD protected.
- This device is suitable for use as a unidirectional or bi-directional load switch, facilitated by its common-drain configuration.

Mechanical data

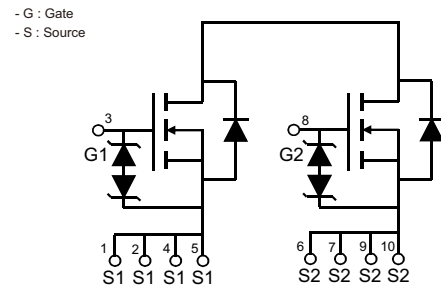
- Case: CSPC3015-10, standard package, molded plastic.



Pin assignment



Circuit diagram



Maximum Ratings (at $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Source to source voltage	V_{SS}	12	V
Gate-source voltage	V_{GS}	± 8	V
Source current DC (Note 1)	I_S	14	A
Source current pulse (Note 1, 2)	I_{SP}	140	A
Total dissipation (Note 1)	P_T	1.7	W
Channel temperature	T_{ch}	150	°C
Storage temperature range	T_{STG}	-55 to +150	

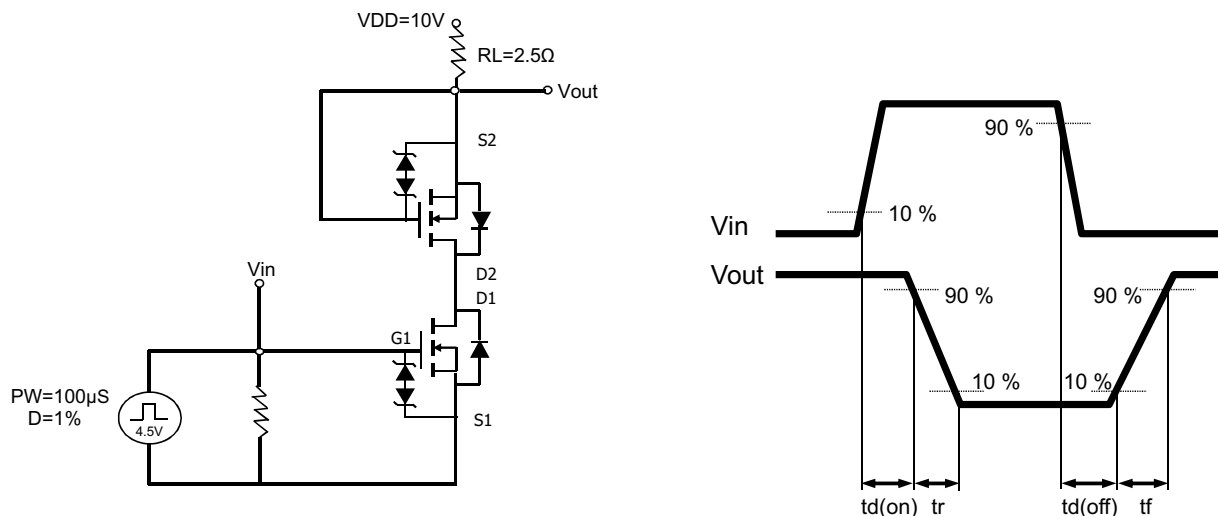
Notes: 1. Mounted on FR4 board (25.4mm x 25.4mm x t1.0mm) using the minimum recommended pad size (36 μm copper).
2. $t = 10\text{ms}$, duty cycle = 1 %

Electrical Characteristics (at TA=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Static parameters						
Source to source breakdown voltage	BV _{SSS}	I _s = 1mA, V _{GS} = 0V	12			V
Zero-gate voltage source current	I _{SSS}	V _{SS} = 12V, V _{GS} = 0V			1	μA
Gate to source leakage current	I _{GSS}	V _{SS} = 0V, V _{GS} = ±8V			±10	μA
Gate to source threshold voltage	V _{TH}	V _{SS} = 10V, I _s = 1.11mA	0.35	0.8	1.4	V
Source to source on-state resistance	R _{SS(on)}	V _{GS} = 4.5V, I _s = 2A	1.0	2.1	2.8	mΩ
		V _{GS} = 3.8V, I _s = 2A	1.1	2.2	2.9	
		V _{GS} = 3.1V, I _s = 2A	1.3	2.5	4.0	
		V _{GS} = 2.5V, I _s = 2A	1.6	2.9	6.15	
Input capacitance	C _{iss}	V _{SS} = 10V, V _{GS} = 0V, f = 1kHz		3530		pF
Output capacitance	C _{oss}			855		
Reverse transfer capacitance	C _{rss}			741		
Turn-on delay time (Note 3)	t _{d(on)}		V _{DD} = 10V, R _L = 2.5Ω, V _{GS} = 4.5V		1.92	
Turn-on rise time (Note 3)	t _r			3.70		
Turn-off delay time (Note 3)	t _{d(off)}			16.6		
Turn-off fall time (Note 3)	t _f			11.2		
Total gate charge (Note 3)	Q _g	V _{SS} = 20V, I _s = 7A, V _{GS} = 6V		59.7		nC
Gate1-source1 charge (Note 3)	Q _{g1s1}			33.1		
Gate1-source2 charge (Note 3)	Q _{g1s2}			15.5		
Diode forward voltage (Note 4)	V _{F(S-S)}	V _{GS} = 0V, I _s = 2A			1.3	V

Notes: 3. When FET1 is measured, G2 and S2 are short-circuited.

4. When FET1 is measured, FET2 is biased with V_{G2S2}=4.5V.



Rating and Characteristic Curves (CMSBN8208A-HF)

Fig.1 - I_s — V_{ss}

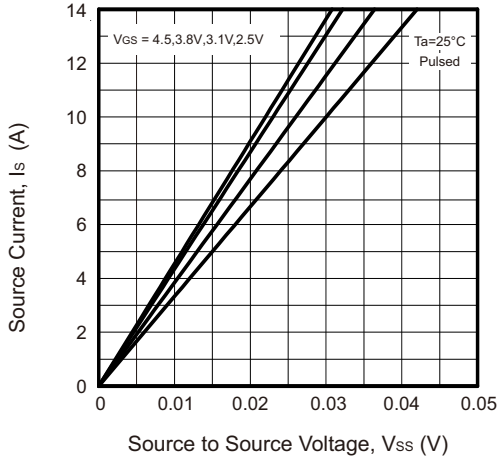


Fig.2 - I_s — V_{gs}

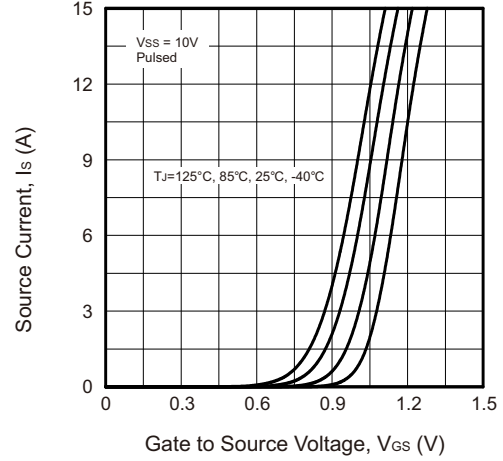


Fig.3 - $R_{ss(on)}$ — I_s

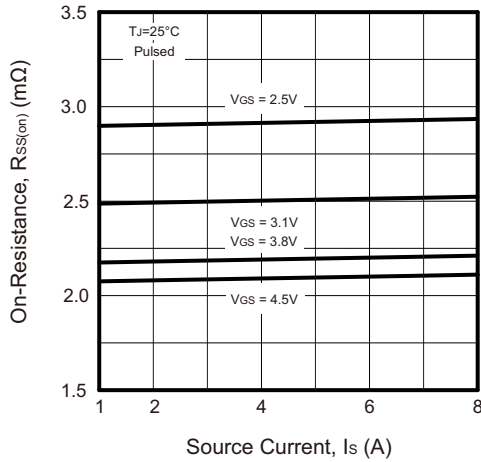


Fig.4 - $R_{ss(on)}$ — V_{gs}

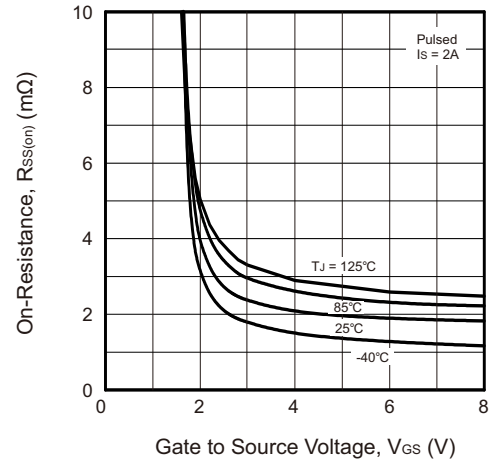


Fig.5 - I_F — V_F

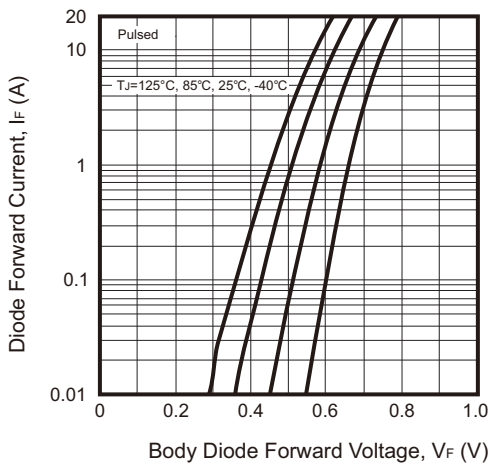
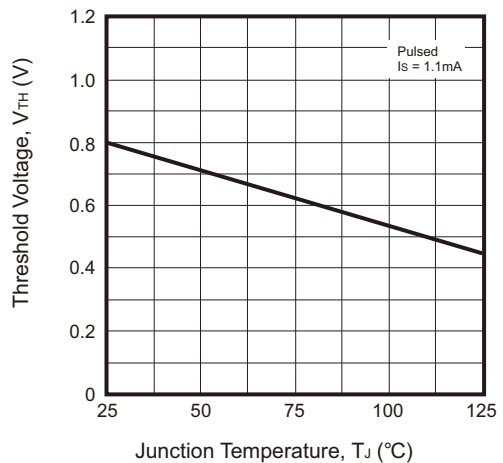


Fig.8 - Threshold Voltage



Rating and Characteristic Curves (CMSBN8208A-HF)

Fig.7 - Capacitance

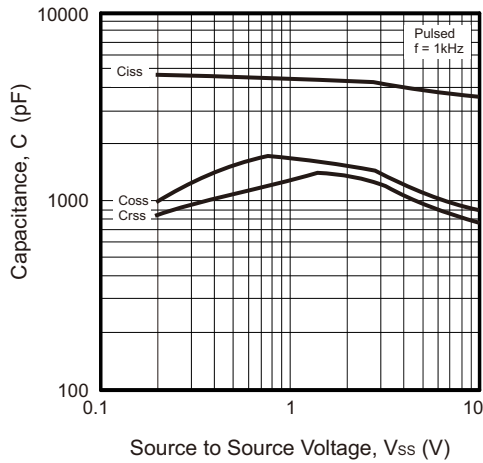


Fig.8 - Gate Charge

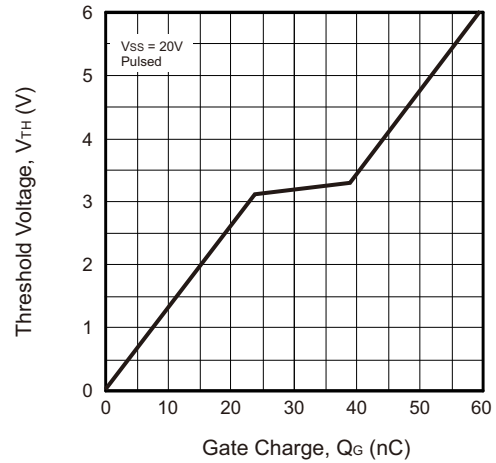


Fig.9 - Normalized Transient Thermal Impedance

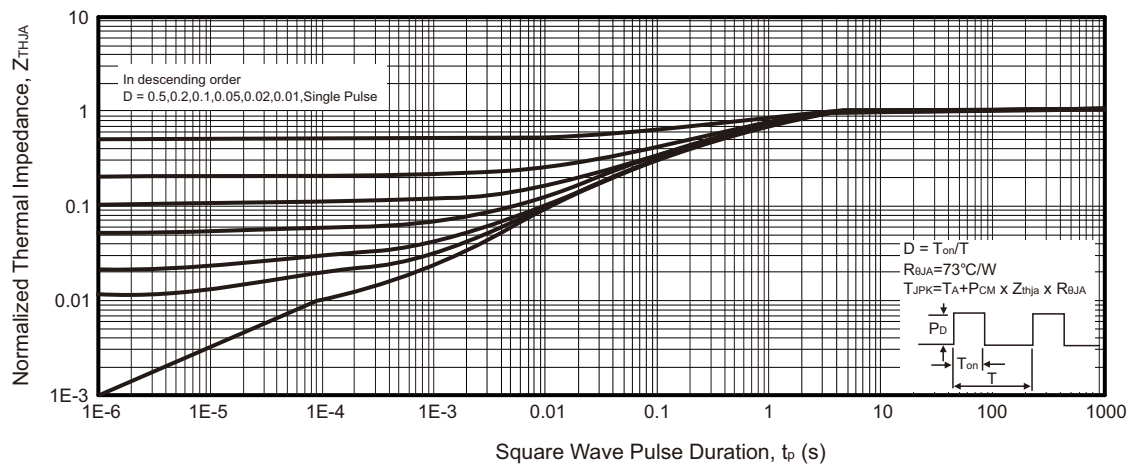


Fig.10 - Maximum Forward Biased Safe Operating Area

