CET CEC8218 Transistor Datasheet

http://www.manuallib.com/cet/cec8218-transistor-datasheet.html

FEATURES

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RDS(ON) = 34mW @VGS = 2.5V.

Super High dense cell design for extremely low RDS(ON).

High power and current handing capability.

Lead free product is acquired.

CEC8218

Dual N-Channel Enhancement Mode Field Effect Transistor

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- High power and current handing capability.
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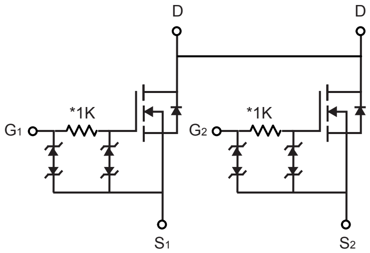
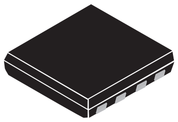
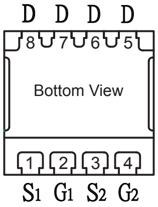


*Typical value by design



DFN3*3



ABSOLUTE MAXIMUM RATINGS T_A = 25°C unless otherwise noted

Parameter	Symbol	Limit	Units
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Drain Current-Continuous	I_D	6.5	A
Drain Current-Pulsed [a]	I_{DM}	25	A
Maximum Power Dissipation	P_D	1.5	W
Operating and Store Temperature Range	T_J,T_{stg}	-55 to 150	°C

Thermal Characteristics

Parameter	Symbol	Limit	Units
Thermal Resistance, Junction-to-Ambient [b]	$R_{\theta JA}$	83	°C/W

Electrical Characteristics $T_A = 25^{\circ}C$ unless otherwise noted

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D = 250µA	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 20V, V_{GS} = 0V			1	µA
Gate Body Leakage Current, Forward	I_{GSSF}	V_{GS} = 12V, V_{DS} = 0V			10	µA
Gate Body Leakage Current, Reverse	I_{GSSR}	V_{GS} = -12V, V_{DS} = 0V			-10	µA
On Characteristics [c]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS} = V_{DS}, I_D = 250µA	0.5		1.2	V
Static Drain-Source	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 5A		17	23	mΩ
On-Resistance		V_{GS} = 2.5V, I_D = 4A		24	34	mΩ
Dynamic Characteristics [d]						
Forward Transconductance	g_{FS}	V_{DS} = 10V, I_D = 5A		17		S
Switching Characteristics [d]						
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 10V, I_D = 1A, V_{GS} = 4.5V, R_{GEN} = 6Ω		0.34	0.68	µs
Turn-On Rise Time	t_r			0.86	1.72	µs
Turn-Off Delay Time	$t_{d(off)}$			3.60	7.5	µs
Turn-Off Fall Time	t_f			2	4	µs
Total Gate Charge	Q_g	V_{DS} = 10V, I_D = 5A, V_{GS} = 4.5V		4.2	5.6	nC
Gate-Source Charge	Q_{gs}			1.2		nC
Gate-Drain Charge	Q_{gd}			2.5		nC
Drain-Source Diode Characteristics and Maximun Ratings						
Drain-Source Diode Forward Current [b]	I_S				6.5	A
Drain-Source Diode Forward Voltage [c]	V_{SD}	V_{GS} = 0V, I_S = 1.5A			1.2	V

Notes :

a.Repetitive Rating : Pulse width limited by maximum junction temperature.

b.Surface Mounted on FR4 Board, t ≤ 10 sec.

c.Pulse Test : Pulse Width ≤ 300µs, Duty Cycle ≤ 2%.

d.Guaranteed by design, not subject to production testing.

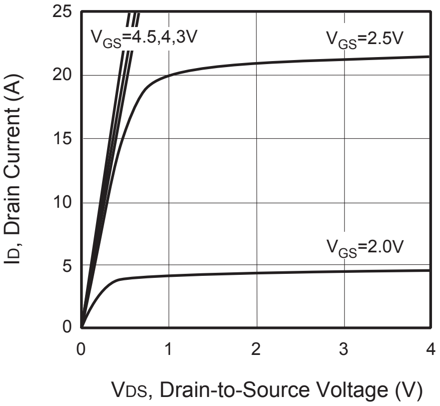


Figure 1. Output Characteristics

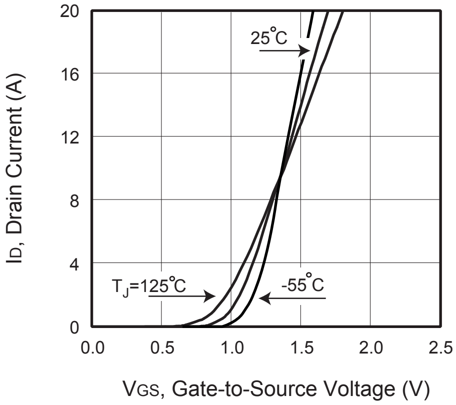


Figure 2. Transfer Characteristics

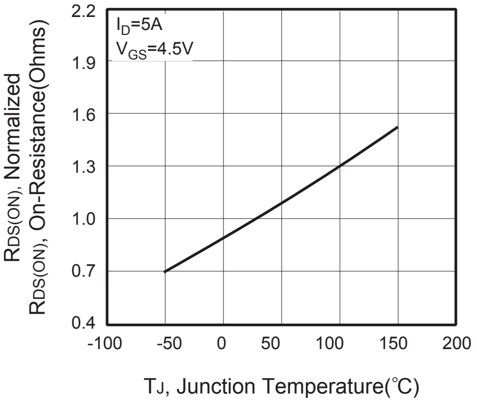


Figure 3. On-Resistance Variation with Temperature

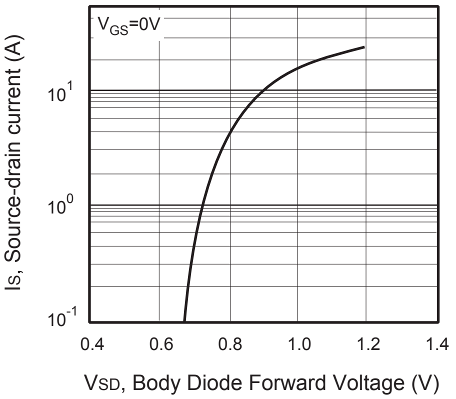


Figure 4. Body Diode Forward Voltage Variation with Source Current

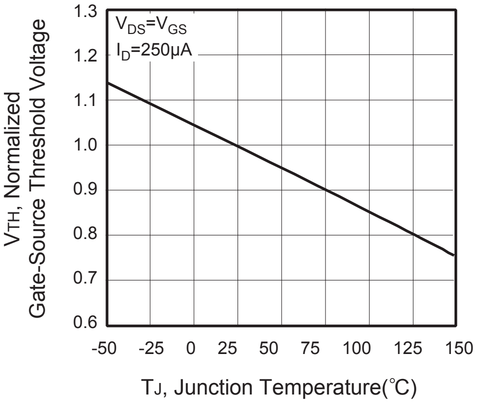


Figure 5. Gate Threshold Variation with Temperature

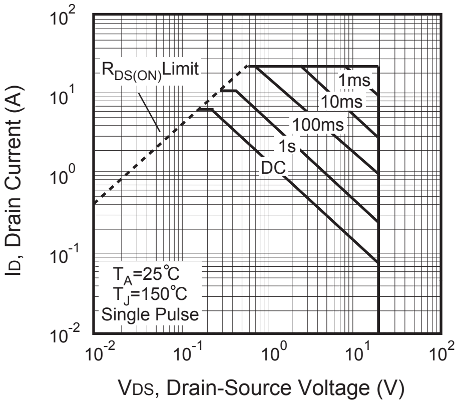


Figure 6. Maximum Safe Operating Area

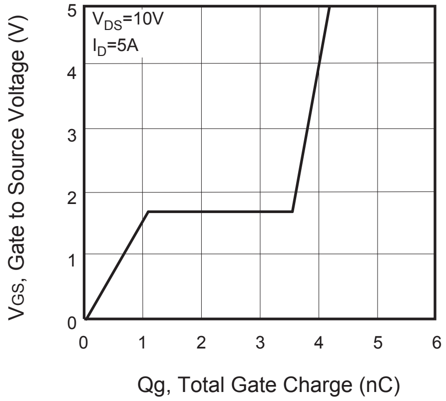


Figure 7. Gate Charge

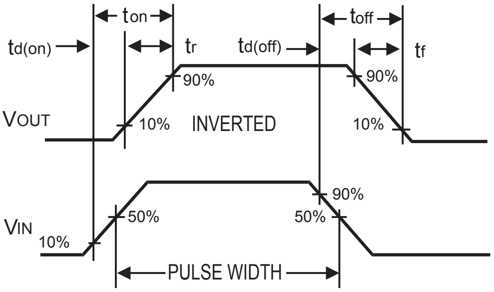


Figure 8. Switching Waveforms

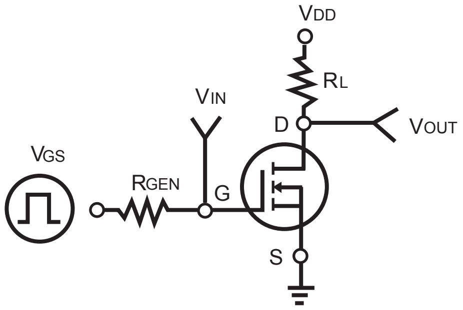


Figure 9. Switching Test Circuit

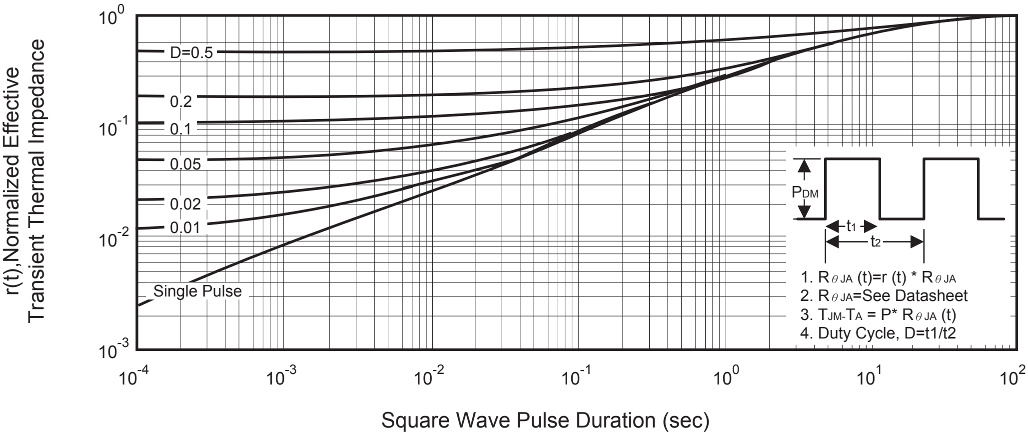


Figure 10. Normalized Thermal Transient Impedance Curve