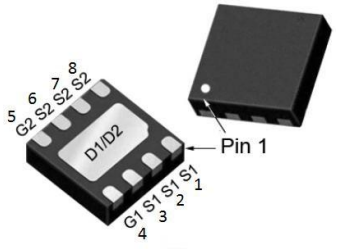
Dual N-Ch 20V MOSFETs

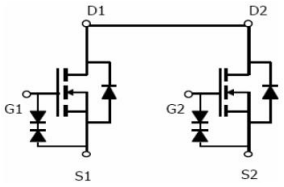
★ Green Device Available
★ Super Low Gate Charge
★ Excellent CdV/dt effect decline
★ Advanced high cell density Trench technology

Product Summary

BVDSS	RDSON	ID
20V	5.8mΩ	30A

DFN3030-8L Pin Configuration





FEATURE

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$
- Low Gate Charge
- High Power and Current Handing Capability
- Surface Mount Package
- ESD Rating:2000V HBM

ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	30	A
Pulsed Drain Current (note 1)	I_{DM}	100	A
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	38	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~+150	℃
Lead Temperature for Soldering Purposes(1/8'' from case for 10 s)	T_L	260	℃

MOSFET ELECTRICAL CHARACTERISTICS

T_a =25 ℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERICTISCS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =19V,V_{GS} = 0V			1	uA
Gate-body leakage current	I_{GSS}	V_{GS} =±12V, V_{DS} = 0V			±7	uA
Gate threshold voltage (note 3)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.5	0.7	1.0	V
Drain-source on-resistance (note 3)	$R_{DS(on)}$	V_{GS} =4.5V, I_D =8.0A		5.8	6.6	mΩ
		V_{GS} =2.5V, I_D =6.0A		6.8	9.5	mΩ
Forward tranconductance (note 3)	g_{FS}	V_{DS} =5V, I_D =4A		10		S
Diode forward voltage (note 3)	V_{SD}	I_S=1.50A, V_{GS} = 0V			1.0	V
DYNAMIC CHARACTERICTISCS (note4)						
Input Capacitance	C_{iss}	V_{DS} =10V,V_{GS} =0V,f =1MHz		1827		pF
Output Capacitance	C_{oss}			241.5		pF
Reverse Transfer Capacitance	C_{rss}			225.4		pF
SWITCHING CHARACTERICTISCS (note 4)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=4.5V, V_{DS} =10V, I_D=6A R_{GEN}=3Ω		6.4		ns
Turn-on rise time	t_r			24.5		ns
Turn-off delay time	$t_{d(off)}$			260.4		ns
Turn-off fall time	t_f			143		ns
Total Gate Charge	Q_g	V_{DS} =10V,V_{GS} =4.5V,I_D=6A		25.2		nC
Gate-Source Charge	Q_{gs}			2.24		nC
Gate-Drain Charge	Q_{gd}			9.1		nC

Notes :

1.Repetitive rating：Pluse width limited by maximum junction temperature

2.Surface Mounted on FR4 board，t≤10 sec.

3. Pulse test : Pulse width≤300μs, duty cycle≤2%.

4. Guaranteed by design, not subject to production.

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTIC

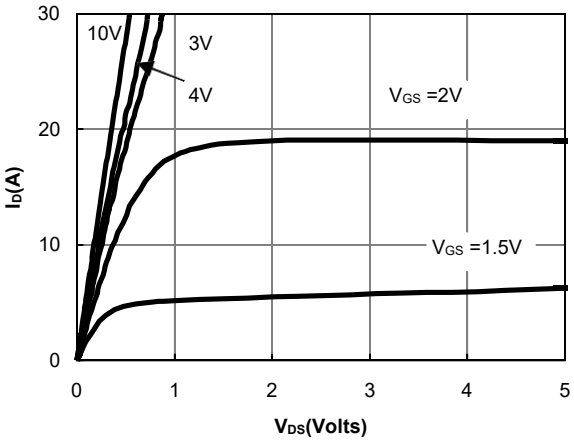


Figure 1: On-Regions Characteristi CS

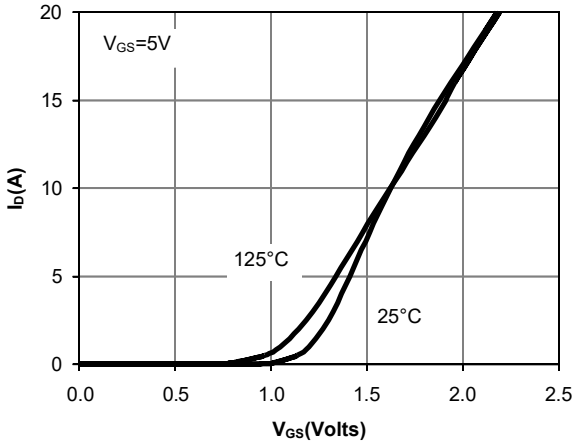


Figure 2: Transfer Characteristics

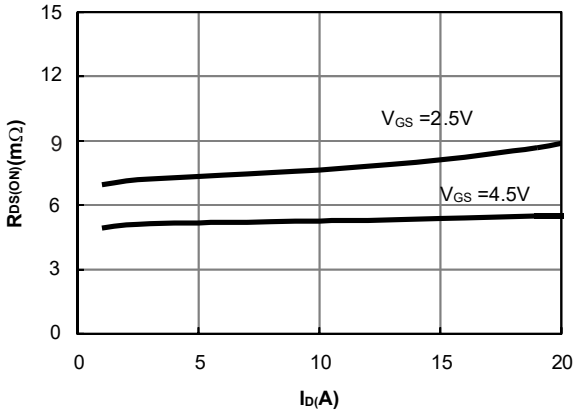


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

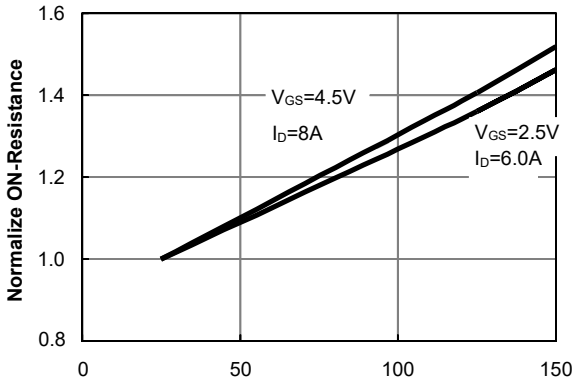


Figure 4: On-Resistance vs. Junction Temperature

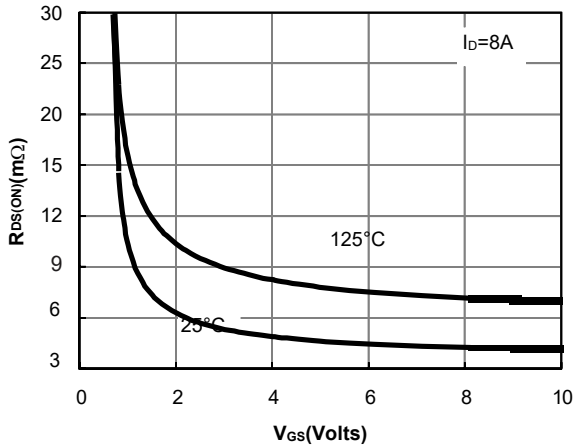


Figure 5: On-Resistance vs. Gate-Source Voltage

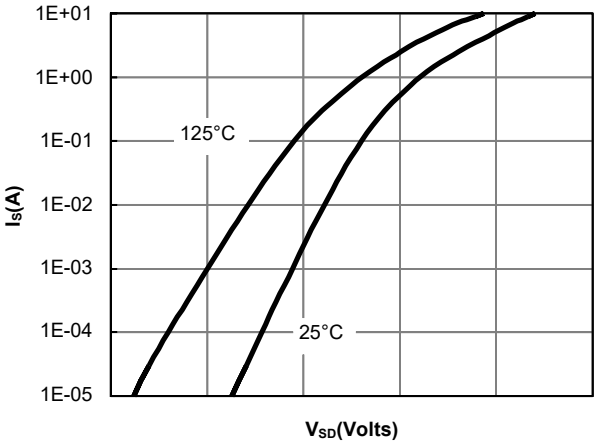


Figure 6: Body-Diode Characteristics

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTIC

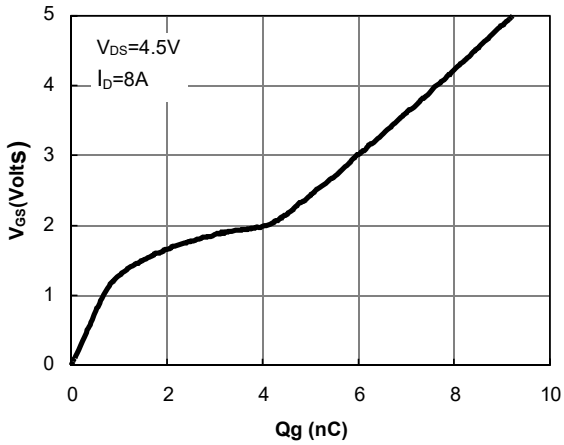


Figure 7: Gate-Charge Characteristics

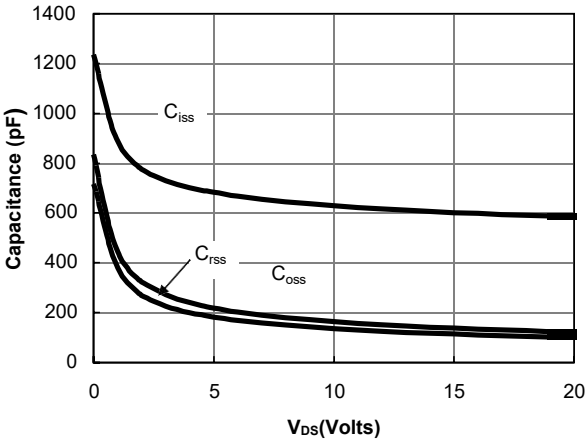


Figure 8: Capacitance Characteristics

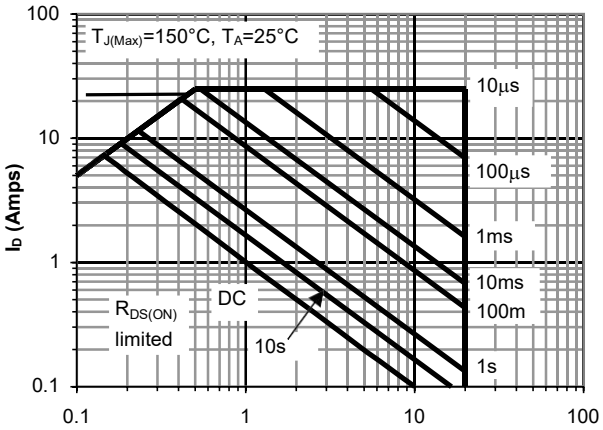


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

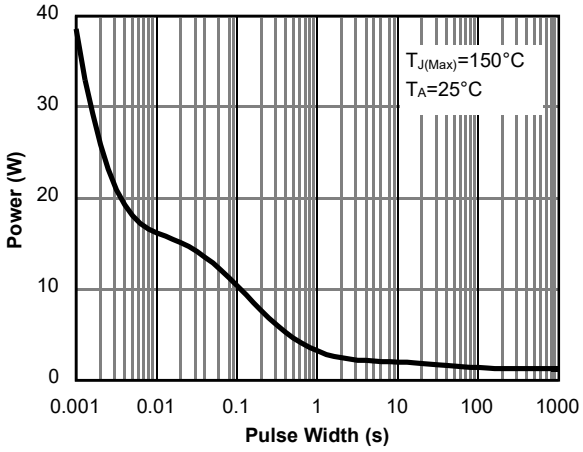


Figure 10: Single Pulse Power Rating Junction-to-

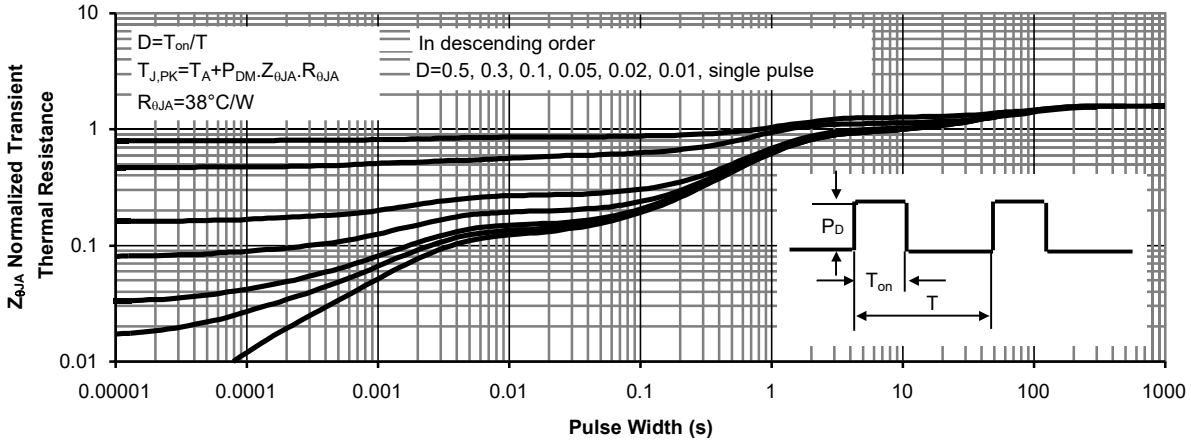
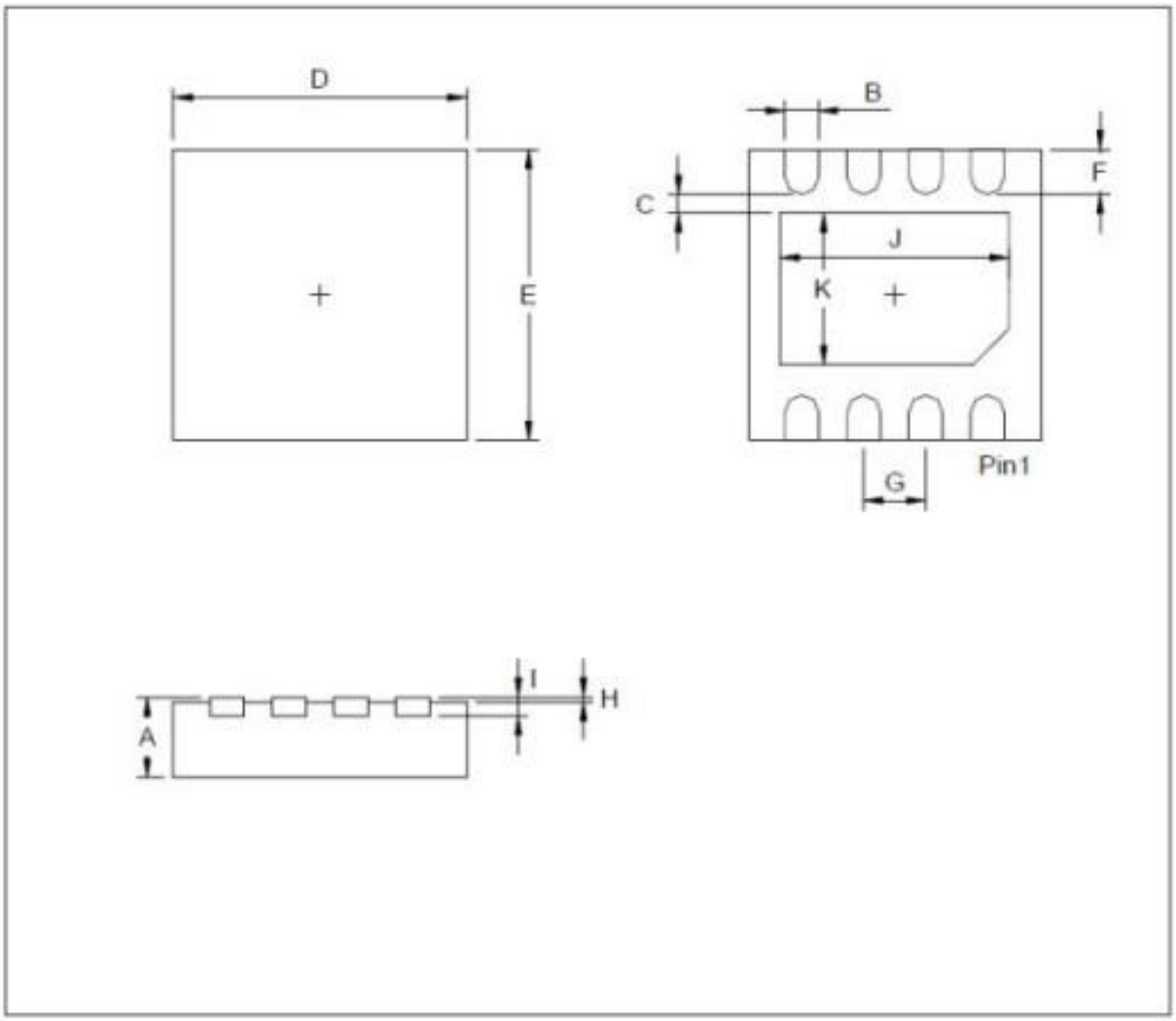


Figure 11: Normalized Maximum Transient Thermal Impedance

DFN3030-8L Package Outline Data



Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	0.7		0.8	I		0.203	
B	0.25		0.35	J	2.2		2.4
C	0.2			K	1.4		1.6
D	2.924		3.076				
E	2.924		3.076				
F	0.324		0.476				
G		0.65					
H	0		0.05				