

General Description

The MY34N20NE5 uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.

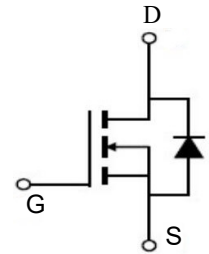
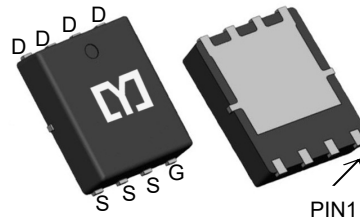


Features

X_{FUU}	200	X
K	34	C
$P_D(T_C=25^\circ C)$	125	W
$T_{FUQP} \#cXI U? 4.5X+$	> 72	o á

Application

- Battery protection
- Load switch
- Uninterruptible power supply



Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MY34N20NE5	PDFN5*6-8L	34N20	5000

Absolute Maximum Ratings ($T_C=25^\circ C$ unless otherwise noted)

Symbol	Parameter	Rating	Unit
Common Ratings ($T_C=25^\circ C$ Unless Otherwise Noted)			
V_{DSS}	Drain-Source Voltage	200	V
V_{GSS}	Gate-Source Voltage	± 20	V
T_J	Maximum Junction Temperature	-55 to 175	$^\circ C$
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ C$
I_S	Source Current-Continuous(Body Diode)	$T_C=25^\circ C$	34 A
Mounted on Large Heat Sink			
I_{DM}	Pulsed Drain Current *	$T_C=25^\circ C$	120 A
I_D	Continuous Drain Current	$T_C=25^\circ C$	30 A
		$T_C=100^\circ C$	20 A
P_D	Maximum Power Dissipation	$T_C=25^\circ C$	125 w
		$T_C=100^\circ C$	62.5 w
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case	1.2	$^\circ C/w$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient **	50	$^\circ C/w$
E_{AS}	Single Pulsed-Avalanche Energy ***	$L=0.5mH$	161.8 mJ

Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Symbol	Parameter	Test Conditions	MY34N20NE5			Unit
			Min	Typ.	Max	
Static Characteristics						
BV _{DSS}	Drain Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250μA	200			V
I _{DSS}	Drain to Source Leakage Current	V _{DS} =200V, V _{GS} =0V			1	μA
		T _J =55°C			50	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	3.0	3.7	5.0	V
I _{GSS}	Gate Source Leakage Current	V _{GS} =±20V, V _{DS} =0V			±100	nA
R _{DS(ON)*}	Drain Source On State Resistance	V _{GS} =10V, I _{DS} =45A		57	72	mΩ
Diode Characteristics						
V _{SD*}	Diode Forward Voltage	I _{SD} =45A, V _{GS} =0V		0.84	1.3	V
t _{rr}	Reverse Recovery Time	I _{SD} =45A, dI _{SD} /dt=100A/μs		97.7		ns
Q _{rr}	Reverse Recovery Charge			424.7		nC

Electrical Characteristics (Cont.) (T_C =25°C Unless Otherwise Noted)

Symbol	Parameter	Test Conditions	MY34N20NE5			Unit
			Min	Typ.	Max	
Dynamic Characteristics						
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V , F=1MHz		3.5		n
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =25V, Frequency=1.0MHz		2570		pF
C _{oss}	Output Capacitance			199		
C _{rss}	Reverse Transfer Capacitance			97		
t _{d(ON)}	Turn on Delay Time	V _{DD} =100V, R _G =40, I _{DS} =45A, V _{GS} =10		15.18		ns
T _r	Turn on Rise Time			39.7		
t _{d(OFF)}	Turn off Delay Time			33.4		
T _f	Turn off Fall Time			35.3		
Gate Charge Characteristics						
Q _g	Total Gate Charge	V _{DS} =100V, V _{GS} =10V, I _D =30A		53		nC
Q _{gs}	Gate Source Charge			15		
Q _{gd}	Gate Drain Charge			19		

^{a1}: Repetitive rating; pulse width limited by maximum junction temperature

Typical Characteristics

Figure 1: Power Dissipation

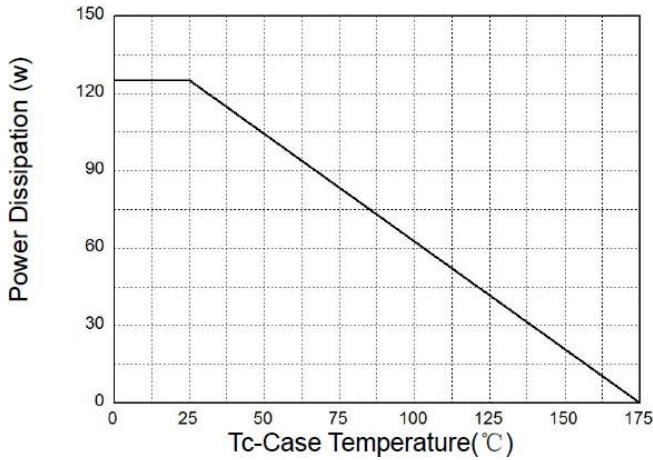


Figure 2: Drain Current

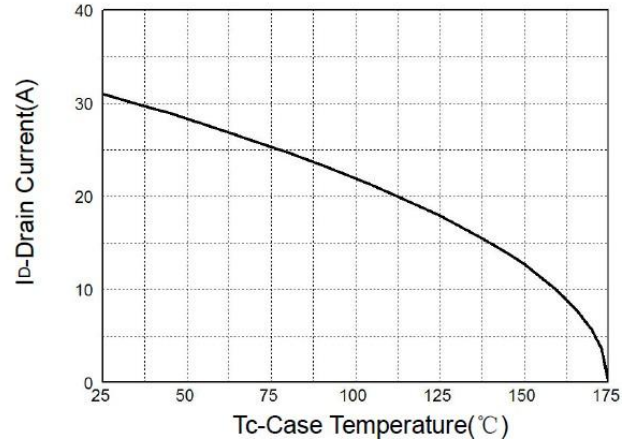


Figure 3: Safe Operation Area

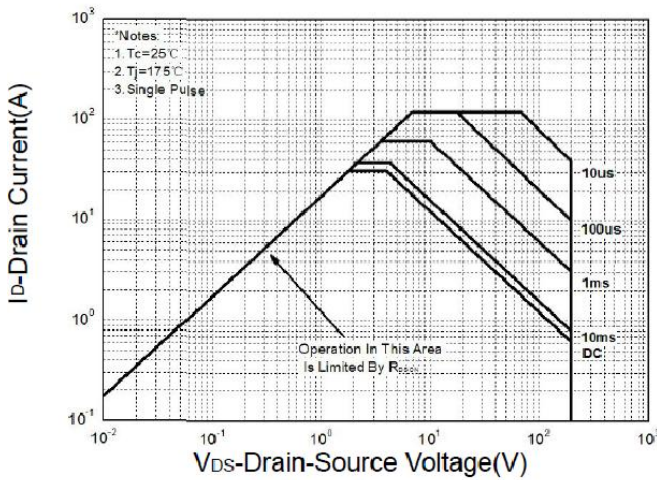


Figure 4: Thermal Transient Impedance

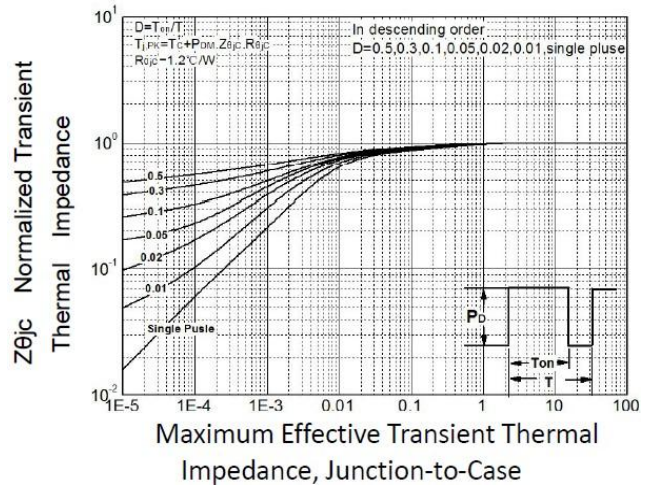


Figure 5: Output Characteristics

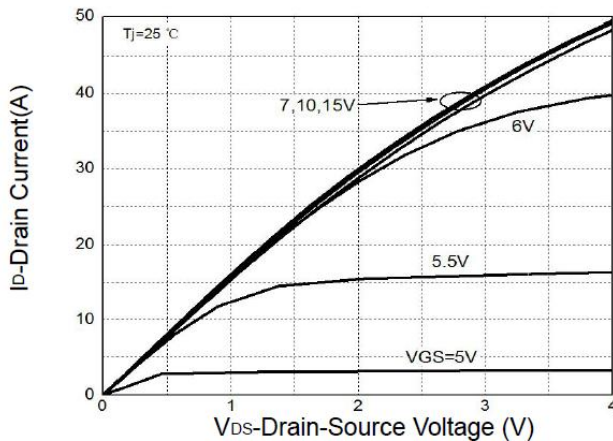


Figure 6: Drain-Source On Resistance

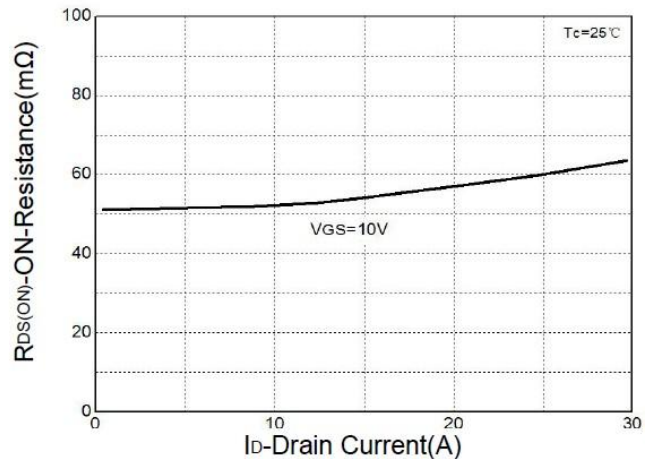


Figure 7: On-Resistance vs. Temperature

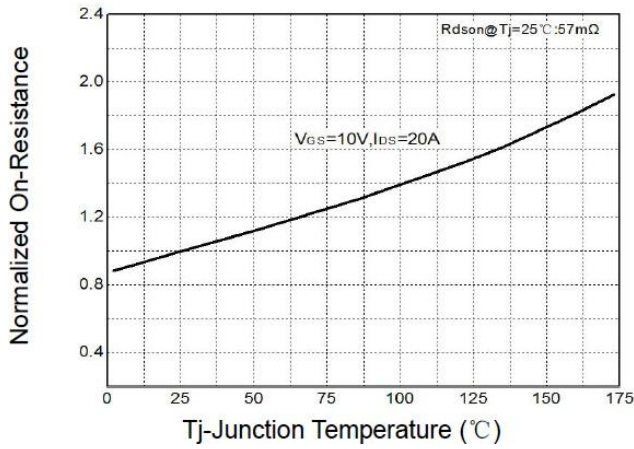


Figure 8: Source-Drain Diode Forward

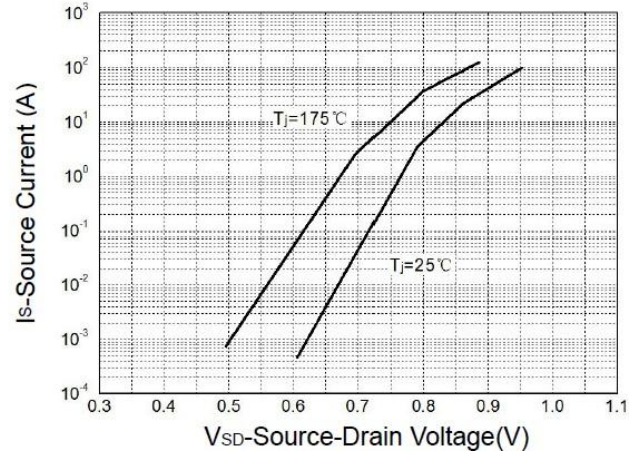


Figure 9: Capacitance Characteristics

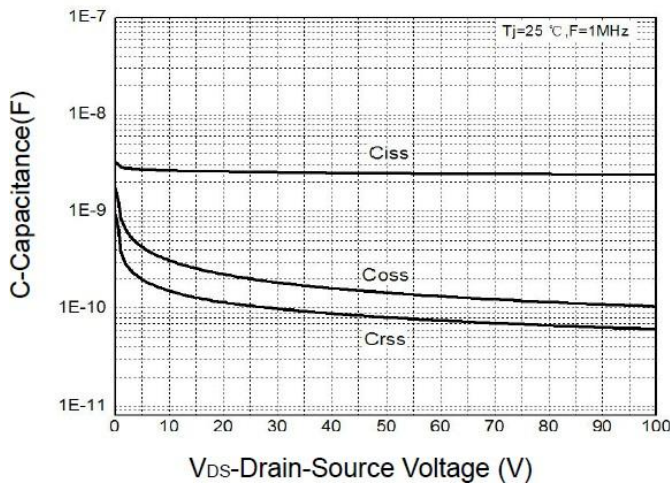
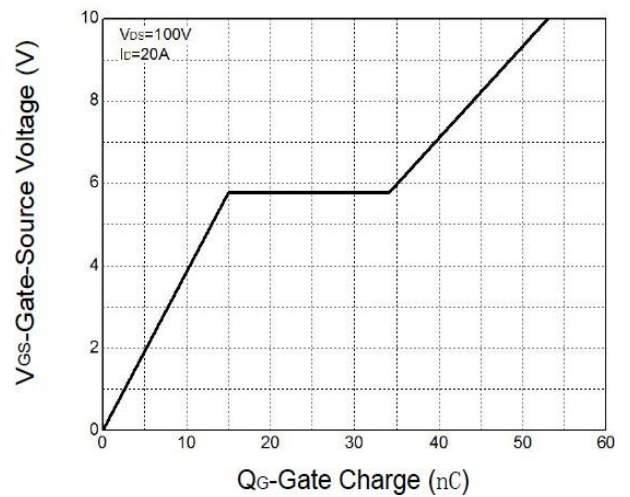
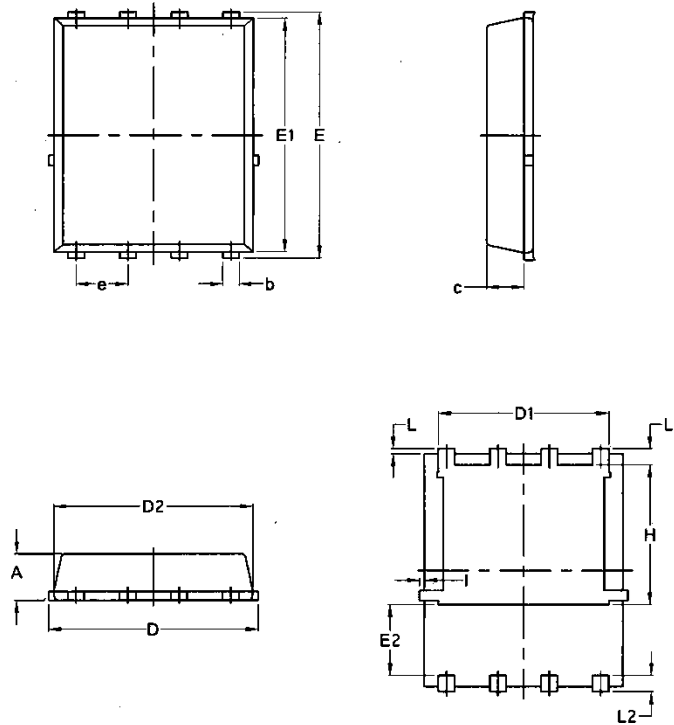


Figure 10: Gate Charge Characteristics



Package Mechanical Data-DFN5*6-8L-JQ Single



Symbol	Common			
	mm		Inch	
	Min	Max	Min	Max
A	1.03	1.17	0.0406	0.0461
b	0.34	0.48	0.0134	0.0189
c	0.824	0.0970	0.0324	0.082
D	4.80	5.40	0.1890	0.2126
D1	4.11	4.31	0.1618	0.1697
D2	4.80	5.00	0.1890	0.1969
E	5.95	6.15	0.2343	0.2421
E1	5.65	5.85	0.2224	0.2303
E2	1.60	/	0.0630	/
e	1.27 BSC		0.05 BSC	
L	0.05	0.25	0.0020	0.0098
L1	0.38	0.50	0.0150	0.0197
L2	0.38	0.50	0.0150	0.0197
H	3.30	3.50	0.1299	0.1378
I	/	0.18	/	0.0070