General Description

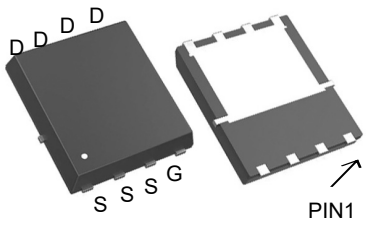
The MY15N25NE5 uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.

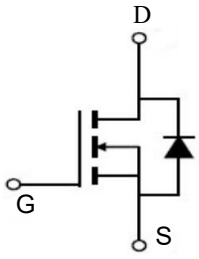
Features

V_{DSS}	250	V
I_D	18	A
$P_D(T_C=25℃)$	58.7	W
$R_{DS(ON)}$(atV_{GS} =10V)	0.12	Ý

Application

- Battery protection
- Load switch
- Uninterruptible power supply





Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MY15N25NE5	PDFN5*6-8L	NULL	5000

Absolute Maximum Ratings (T_C=25℃unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage (V_{GS} = 0V)	V_{DS}	250	V
Continuous Drain Current	I_D	18	A
Pulsed Drain Current	I_{DM}	36	A
Gate-Source Voltage	V_{GS}	±30	V
Single Pulse Avalanche Energy	E_{AS}	330	mJ
Avalanche Current	I_{AR}	3.2	A
Repetitive Avalanche Energy	E_{AR}	234	mJ
Power Dissipation (T_C = 25°C)	P_D	58.7	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	°C
Thermal Resistance, Junction-to-Case	R_{thJC}	2.13	°C/W
Thermal Resistance, Junction-to-Ambient	R_{thJA}	52	

Electrical Characteristics (T_J=25 ℃, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	250	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 250V, V_{GS} = 0V, T_J = 25°C	--	--	1	μA
		V_{DS} = 240V, V_{GS} = 0V, T_J = 125°C	--	--	100	
Gate-Source Leakage	I_{GSS}	V_{GS} = ±25V	--	--	±100	nA
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	2.2	--	4.0	V
Drain-Source On-Resistance (Note3)	$R_{DS(on)}$	V_{GS} = 10V, I_D = 2.5A	--	0.12	0.16	Ω
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1.0MHz	--	810	--	pF
Output Capacitance	C_{oss}		--	110	--	
Reverse Transfer Capacitance	C_{rss}		--	7	--	
Total Gate Charge	Q_g	V_{DD} = 240V, I_D = 5.0A, V_{GS} = 10V	--	8.4	--	nC
Gate-Source Charge	Q_{gs}		--	1.2	--	
Gate-Drain Charge	Q_{gd}		--	3.3	--	
Turn-on Delay Time	td(on)	V_{DD} = 150V, I_D = 5.0A, R_G = 25 Ω	--	20	--	ns
Turn-on Rise Time	t_r		--	50	--	
Turn-off Delay Time	td(off)		--	70	--	
Turn-off Fall Time	t_f		--	53	--	
Continuous Body Diode Current	I_S	T_C = 25 °C	--	--	5	A
Pulsed Diode Forward Current	I_{SM}		--	--	20	
Body Diode Voltage	V_{SD}	T_J = 25°C, I_{SD} = 5A, V_{GS} = 0V	--	--	1.4	V
Reverse Recovery Time	t_{rr}	V_{GS} = 0V, I_S = 5A, di_F/dt =100A /μs	--	263	--	ns
Reverse Recovery Charge	Q_{rr}		--	1.9	--	μC

Notes

1. Repetitive Rating: Pulse width limited by maximum junction temperature
2. I_{AS} = 3.2A, V_{DD} = 50V, R_G = 25 Ω, Starting T_J = 25 °C
3. Pulse Test: Pulse width ≤ 300μs, Duty Cycle ≤ 1%

Typical Characteristics

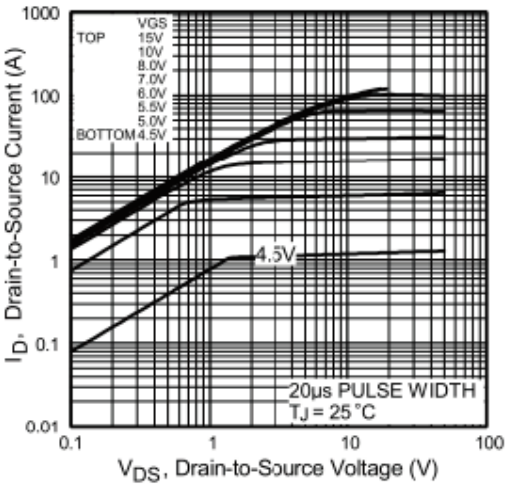


Fig 1. Typical Output Characteristics

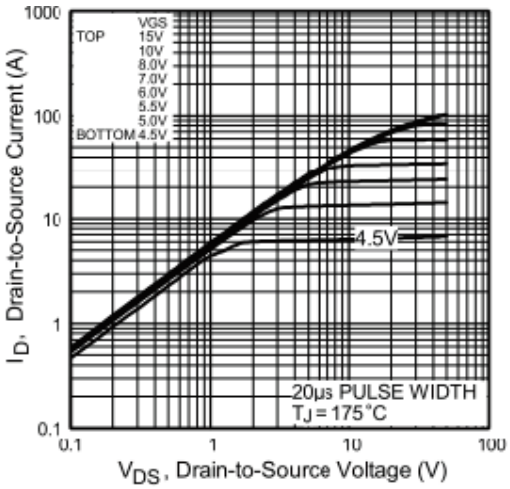


Fig 2. Typical Output Characteristics

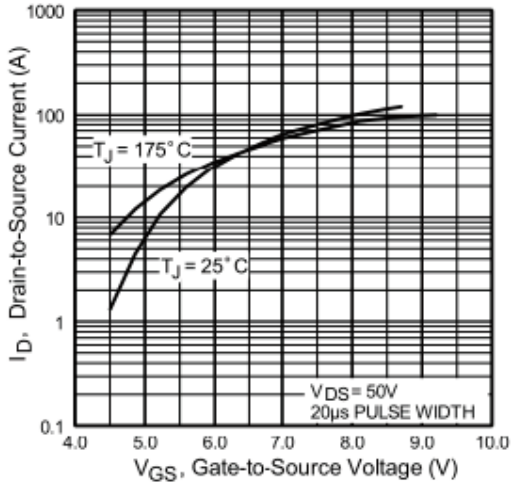


Fig 3. Typical Transfer Characteristics

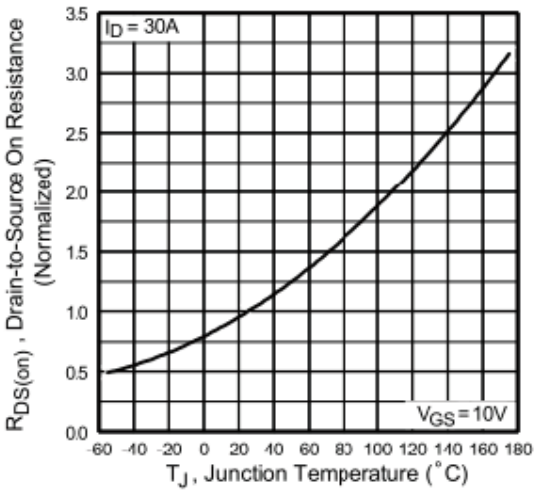


Fig 4. Normalized On-Resistance Vs. Temperature

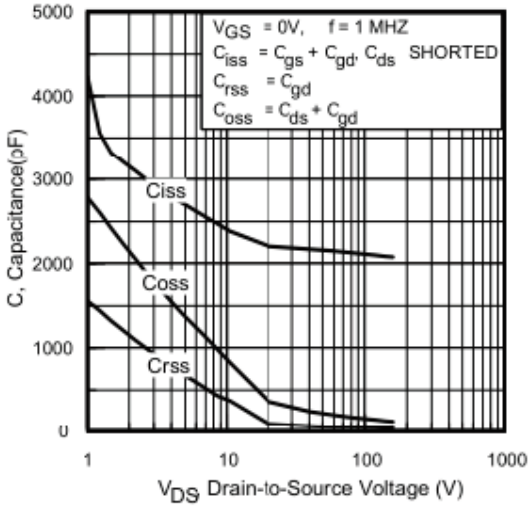


Fig 5. Typical Capacitance Vs. Drain-to-Source Voltage

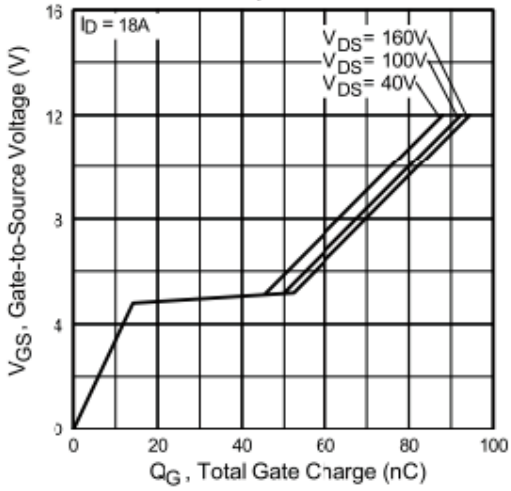
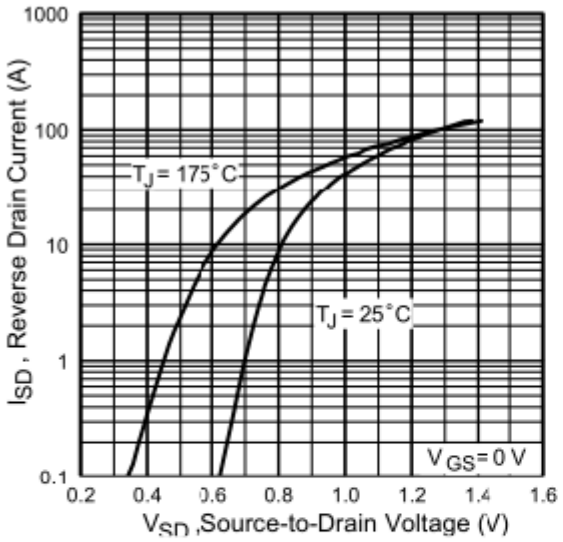


Fig 6. Typical Gate Charge Vs. Gate-to-Source Voltage



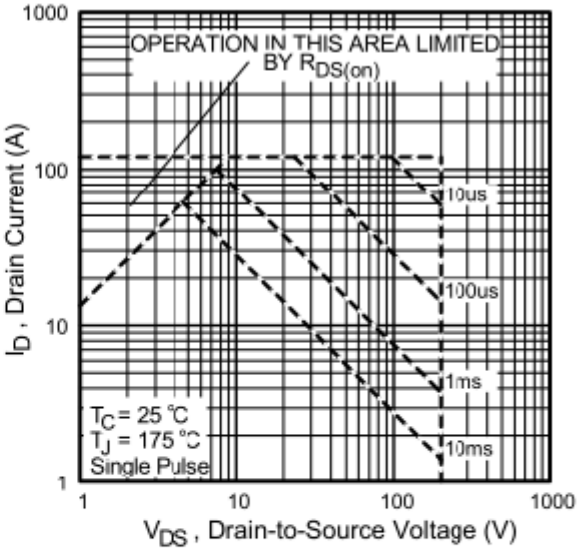


Fig 8. Maximum Safe Operating Area

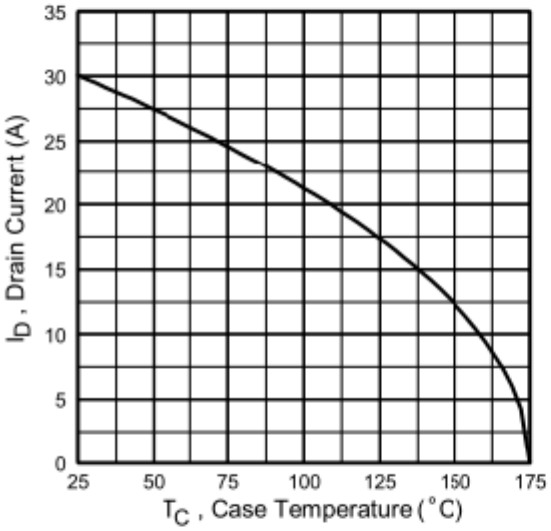


Fig 9. Maximum Drain Current Vs. Case Temperature

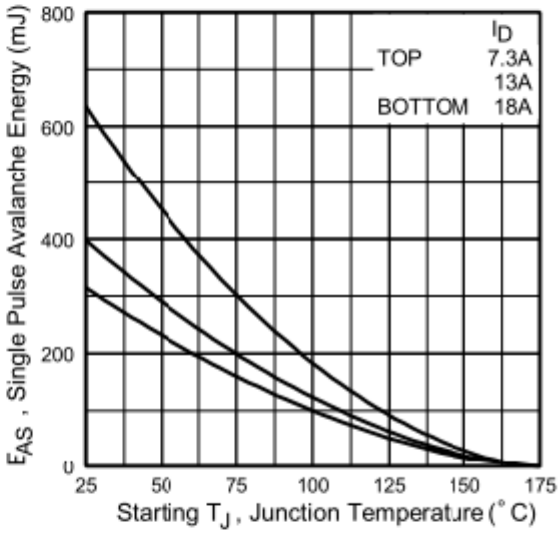


Fig 12c. Maximum Avalanche Energy Vs. Drain Current

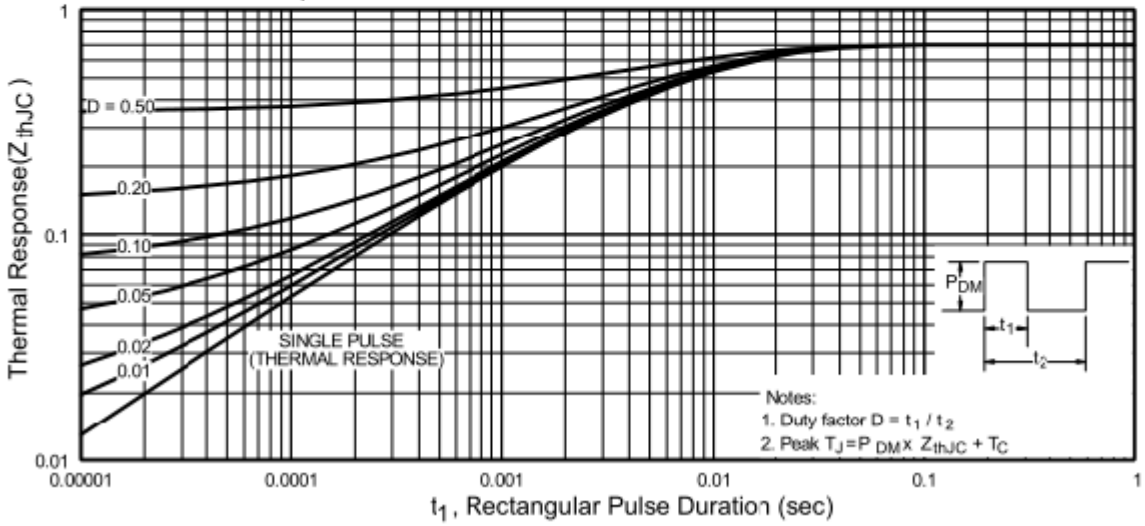
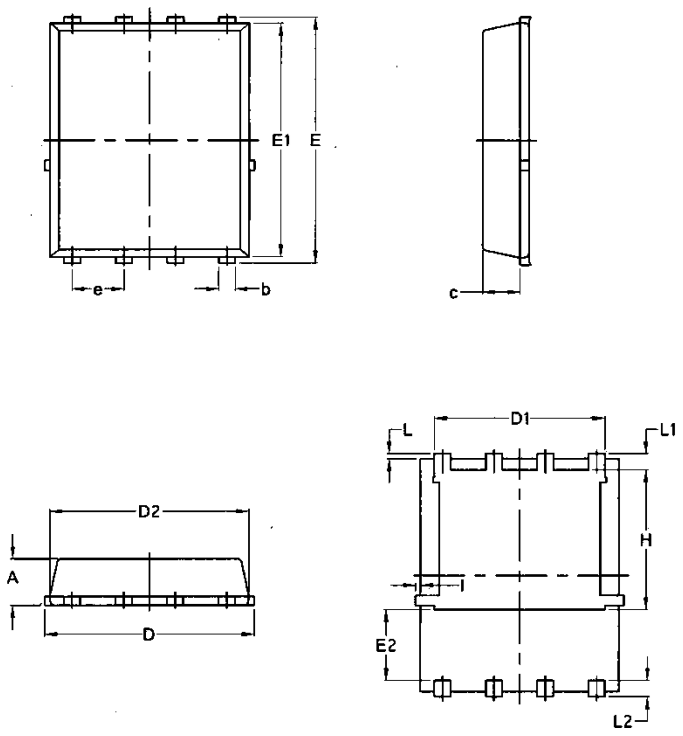


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Case

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



Symbol	Common			
	mm		Inch	
	Mim	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