General Description

The MY3035Q is the single P-Channel logic enhancement mode power field effect transistors to provide excellent $R_{DS(on)}$, low gate charge and low gate resistance.

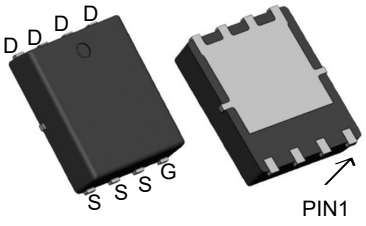
RoHS Compliant

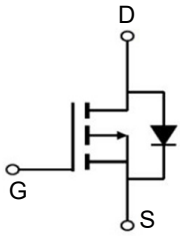
Features

V_{DSS}	-30	V
I_D	-35	A
$R_{DS(ON)}$(atV_{GS} =10V)	< 9	mÝ
$R_{DS(ON)}$(atV_{GS} =4.5V)	< 13	mÝ

Application

- Battery protection
- Load switch
- Uninterruptible power supply





Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MY3035Q	PDFN3*3-8L	MY3035Q	5000

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

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current–Continuous [a]	T_C=25ºC	I_D	-35	A
	T_C=100ºC		-22	
Drain Current –Pulsed [a]		I_{DM}	-120	A
Power Dissipation (T_C=25ºC)		P_D	21	W
Power Dissipation – Derate above 25ºC			0.17	W/ºC
Storage Temperature Range		T_{STG}	-55 ~ +150	ºC
Operating Junction Temperature Range		T_J	-55 ~ +150	ºC
Thermal Resistance, Junction-to-Ambient		$R_{\theta JA}$	62	ºC/W
Thermal Resistance, Junction-to-Case		$R_{\theta JC}$	6	ºC/W

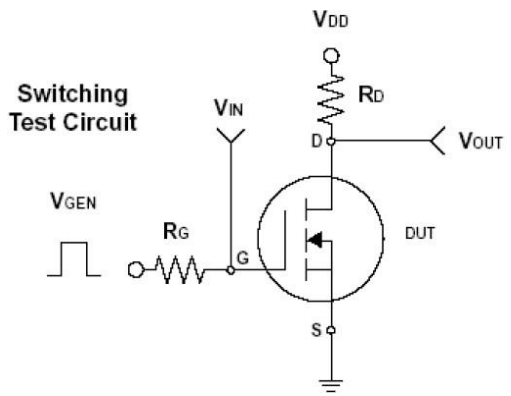
Electrical Characteristics (T_A=25ºC unless otherwise noted)

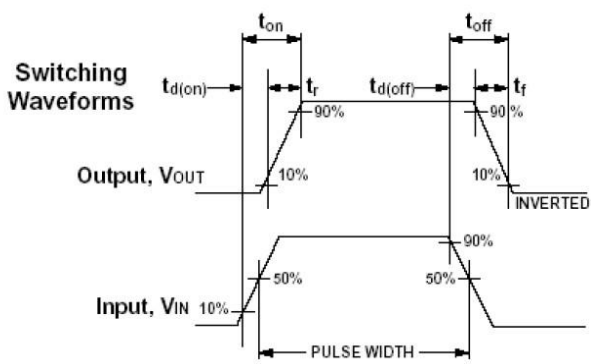
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=-250μA	-30	---	---	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=-30V, V_{GS}=0V, T_J=25ºC	---	---	-1	μA
		V_{DS}=-24V, V_{GS}=0V, T_J=100ºC	---	---	-10	μA
Gate-Body Leakage	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	---	---	±100	nA

On Characteristics [a]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-1.3	---	-1.8	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-15A	---	7	9	mΩ
		V_{GS}=-4.5V, I_D=-9A	---	10	13	
Forward Transconductance	gfs	V_{DS}=-10V, I_D=-12A	---	10.5	---	S
Drain-Source Diode Characteristics [a]						
Continuous Source Current	I_S	V_G=V_D=0V, Force Current	---	---	-30	A
Pulsed Source Current	I_{SM}		---	---	-120	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=-1.0A, T_J=25℃	---	---	-1.0	V
Dynamic Characteristics [b]						
Input Capacitance	Ciss	V_{DS}=-15V, V_{GS}=0V, F=1MHz	---	1530	2210	pF
Output Capacitance	Coss		---	160	240	
Reverse Transfer Capacitance	Crss		---	105	160	
Switching Characteristics [b]						
Total Gate Charge	Qg	V_{DS}=-15V, V_{GS}=-4.5V, $_D$=-12A	---	14.6	21	nC
Gate-Source Charge	Qgs		---	4.1	6	
Gate-Drain Charge	Qgd		---	6.3	9	
Turn-On Delay Time	Td(on)	V_{DD}=-15V, V_{GS}=-10V, R_G=6Ω I_D=-1A	---	9	17	ns
Rise Time	Tr		---	21.8	41	
Turn-Off Delay Time	Td(off)		---	59.8	114	
Fall Time	Tf		---	14.4	27	

Notes: a. Repetitive Rating: Pulsed width limited by maximum junction temperature.
b. Pulse test: pulse width ≤ 300us, duty cycle ≤ 2%.
c. Guaranteed by design, not subject to production testing.

Switching Time Test Circuit and Waveforms





Soldering Methods For Products

1. Storage environment : Temperature=10ºC~35ºC, Humidity=65%±15%
2. Reflow soldering of surface mount devices

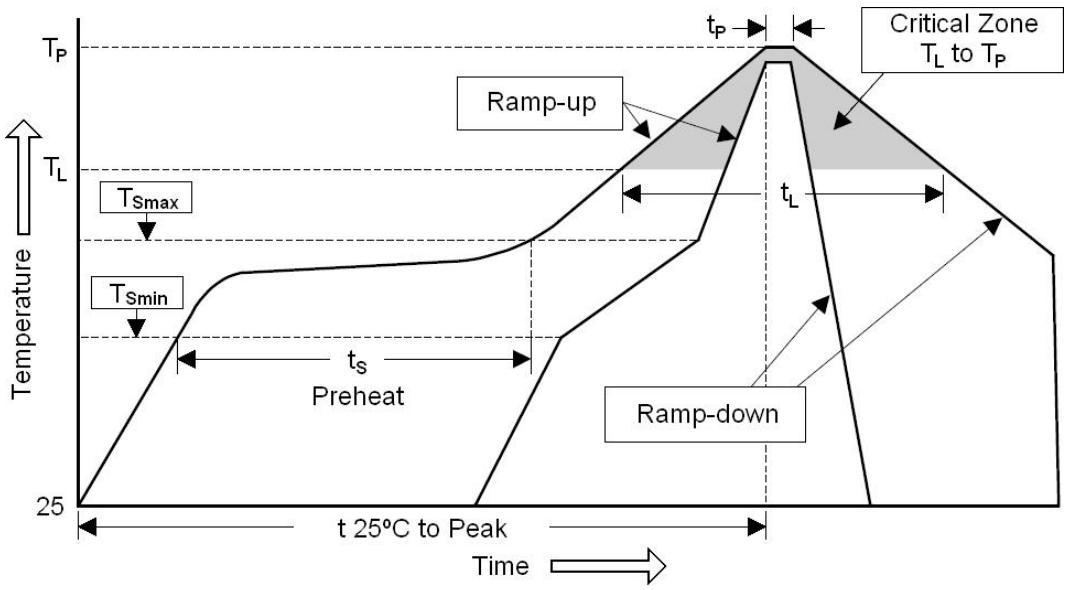


Figure : Temperature Profile

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	< 3ºC/sec	< 3ºC/sec
Preheat - Temperature Min (TSmin) - Temperature Max (TSmax) - Time (Min to Max) (ts)	 100ºC 150ºC 60 ~ 120 sec	 100ºC 200ºC 60 ~ 180 sec
TSmax to T_L - Ramp-up rate	 < 3ºC/sec	 < 3ºC/sec
Time maintained above: - Temperature (T_L) - Time (t_L)	 183ºC 60 ~ 150 sec	 217ºC 60 ~ 150 sec
Peak Temperature (T_P)	240ºC +0/-5ºC	260ºC +0/-5ºC
Time within 5ºC of actual Peak Temperature (t_P)	10 ~ 30 sec	20 ~ 40 sec
Ramp-down rate	< 6ºC/sec	< 6ºC/sec
Time 25ºC to Peak Temperature	< 6 minutes	< 8 minutes

3. Flow (wave) soldering (solder dipping)

Product	Peak Temperature	Dipping Time
Pb devices	245ºC ±5ºC	5sec ±1sec
Pb-Free devices	260ºC +0/-5ºC	5sec ±1sec

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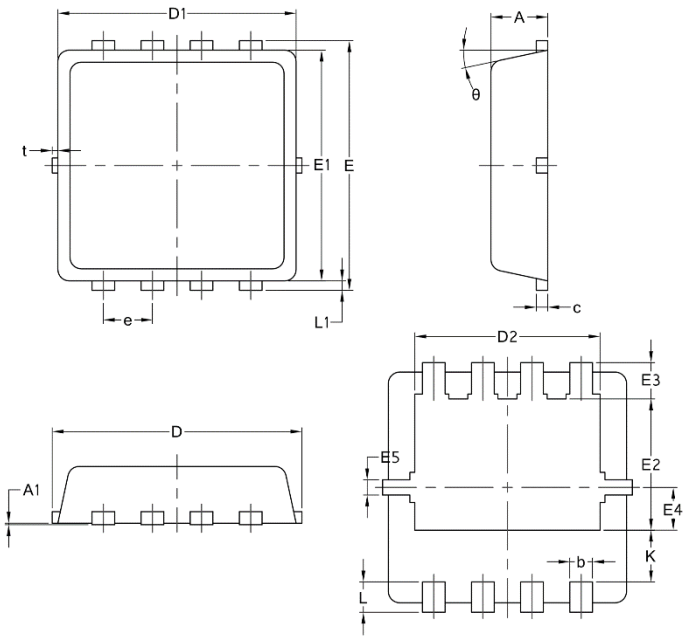
- MOS 管电路是静电敏感元器件，且对生产环境要求较严，建议在存放及生产操作时一定要避免静电干扰，经锡炉或回焊炉的温度切勿超过 260 度。

Package Mechanical Data-DFN3*3-8L-JQ Single



Symbol	Common		
	mm		
	Mim	Nom	Max
A	0.70	0.75	0.85
A1	/	/	0.05
b	0.20	0.30	0.40
c	0.10	0.152	0.25
D	3.15	3.30	3.45
D1	3.00	3.15	3.25
D2	2.29	2.45	2.65
E	3.15	3.30	3.45
E1	2.90	3.05	3.20
E2	1.54	1.74	1.94
E3	0.28	0.48	0.65
E4	0.37	0.57	0.77
E5	0.10	0.20	0.30
e	0.60	0.65	0.70
K	0.59	0.69	0.89
L	0.30	0.40	0.50
L1	0.06	0.125	0.20
t	0	0.075	0.13
Φ	10	12	14