YJQ70G06AQ

(at V_{GS}=10V) 5.5mΩ
● $R_{DS(ON)}$(at V_{GS}=4.5V) 9.5mΩ
● 100% EAS Tested

General Description

● Excellent package for heat dissipation
● High density cell design for low $R_{DS(ON)}$
● Part no. with suffix "Q" means AEC-Q101 qualified

Applications

● Power switching application
● Uninterruptible power supply
● DC-DC convertor
●

■ **Absolute Maximum Ratings** (T_A=25 unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	60	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	T_C=25	I_D	70	A
	T_C =100		49	
	T_A=25		13	
	T_A =100		9.6	
Pulsed Drain Current [A]		I_{DM}	270	A
Avalanche energy [B]		EAS	144	mJ
Total Power Dissipation [C]	T_C=25	P_D	96	W
	T_C=100		48	
	T_A=25		2.9	
	T_A =100		1.4	
Thermal Resistance Junction-to-Case	Steady-State	$R_{\theta JC}$	1.56	/W
Thermal Resistance Junction-to-Ambient [D]	Steady-State	$R_{\theta JA}$	51	/W

				QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJQ70G06AQ	F1	Q70G06A	5000	10000	100000	13" reel

■ Electrical Characteristics (T_J=25 unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}= 0V, I_D=250μA	60			V
		DS GS=0V			1	μA
		V_{GS}= ±20V, V_{DS}=0V			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=250μA	1	1.7	2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=20A		4.6	5.5	mΩ
		V_{GS}=4.5V, I_D=20A		6.5	9.5	
Diode Forward Voltage	V_{SD}	I_S=20A, V_{GS}=0V		0.8	1.2	V
Gate resistance	R_G	f=1MHz		1.6		Ω
Dynamic Parameters						
Output Capacitance	C	V_{DS}=25V, V_{GS}=0V, f=1MHz	-	1000		pF
Switching Parameters						
Total Gate Charge	Q_g		-	38.5	-	
Gate-Source Charge	Q_{gs}	V_{GS}=10V, V_{DS}=30V, I_D=30A	-	9	-	nC
Gate-Drain Charge	Q_{gd}		-	8.2	-	
Reverse Recovery Charge	Q_{rr}		-	31.5	-	nC
Reverse Recovery Time	t	I =20A, di/dt=100A/us	-	37	-	ns
Turn-on D=. ay Time	D(on)t					
Turn-on Rise Time	t_r		-	54.6	-	
Turn-off D=. p y Time	D(off)t	V_{GS} DD DS	-	28	-	
Turn-off fall Time	t_f			10.5		

B. V_{DD}=30V, V_{GS}=10V , L=1mH, IAS=17A.

C. P_d is based on max. junction temperature, using junction-case thermal resistance.

D. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board with 2oz. Copper, in the still air environment with T_A =25 . The value in any given application depends on the user's specific board design. The maximum allowed junction temperature is 175

■Typical Electrical and Thermal Characteristics Diagrams

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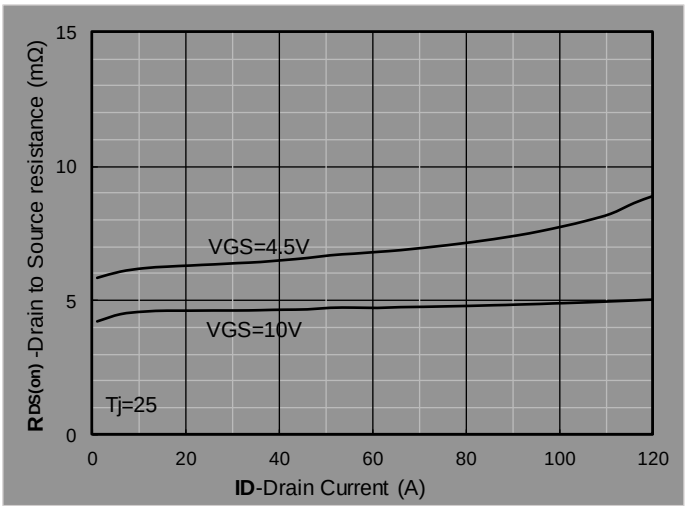
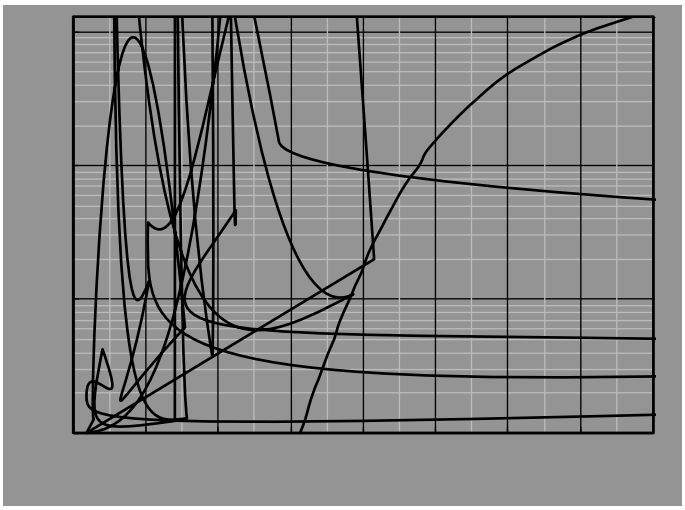
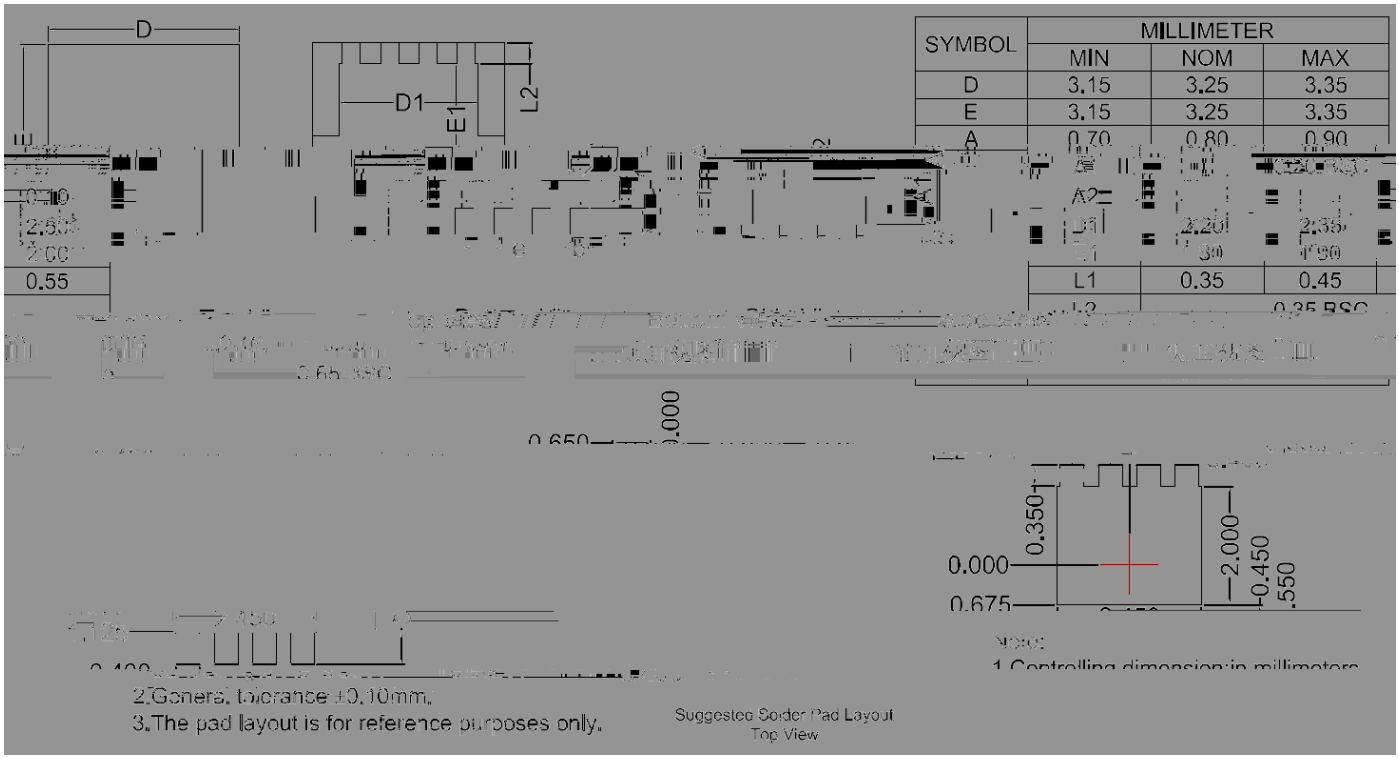

15
10
5
0
RDS(on) -Drain to Source resistance (mΩ)
VGS=4.5V
VGS=10V
Tj=25
0
20
40
60
80
100
120
ID-Drain Current (A)



■DFN3333-8L Package information



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
D	3.15	3.25	3.35
E	3.15	3.25	3.35
A	0.70	0.80	0.90
A2		2.20	2.35
L1	0.35		0.45
L2		0.35 BSC	

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