N-Channel Enhancement Mode Field Effect Transistor

Product Summary

- V_{DS} 40V
- I_D 20A
- $R_{DS(ON)}$(at V_{GS}=10V) 15.0mΩ
- $R_{DS(ON)}$(at V_{GS}=4.5V) 20.0mΩ
- 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
- 12V Automotive systems

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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	40	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	T_C=25	I_D	20	A
	T_C =100		17	
Pulsed Drain Current [A]		I_{DM}	80	A
Avalanche energy [B]		EAS	40	mJ
Total Power Dissipation [C]	T_A=25	P_D	2.2	W
	T_C=25		21	
Thermal Resistance Junction-to-Case	Steady-State	$R_{\theta JC}$ `/ЊЄ@ a† b • `- 0"Ð	5.9	/W
		,T_{STG}	-55 +150	

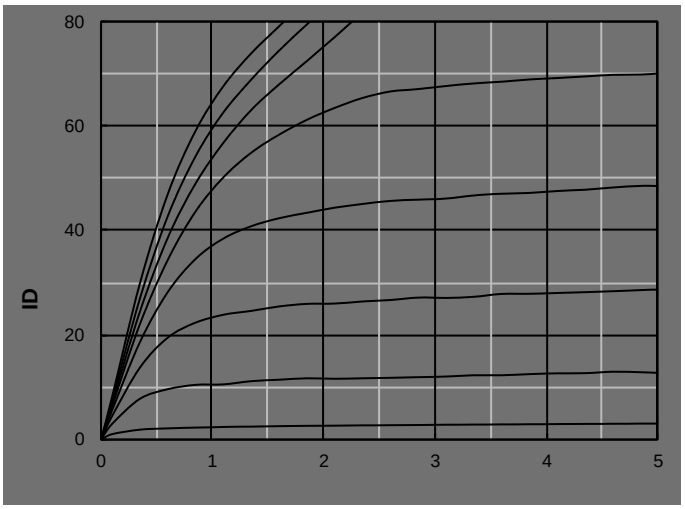
■ Ordering Information (Example)

PREFERED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJQ20N04AQ	F1	Q20N04	5000	10000	100000	13" reel

■ **Electrical Characteristics** (T_J=25 unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units

■Typical Electrical and Thermal Characteristics Diagrams



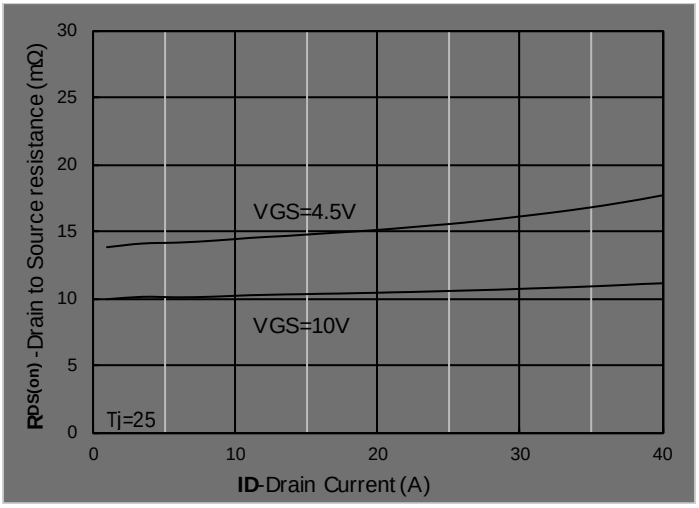


Figure 7. $R_{DS(on)}$ VS Drain Current

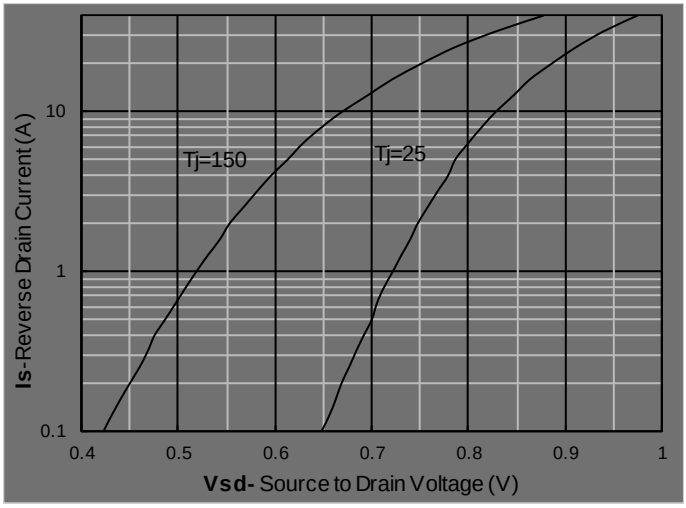
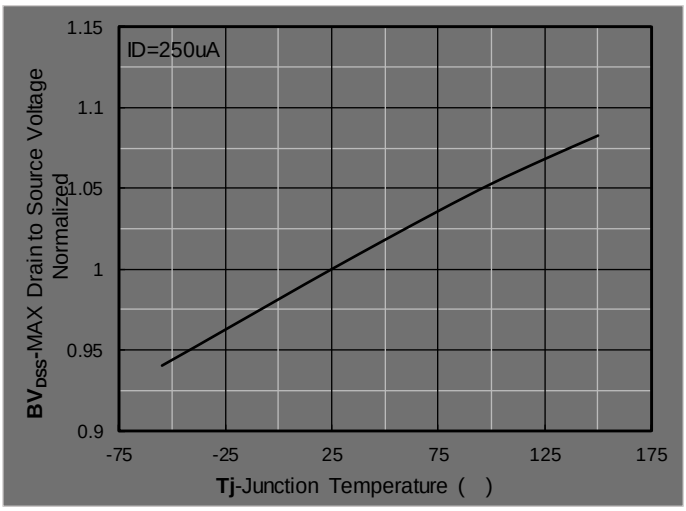
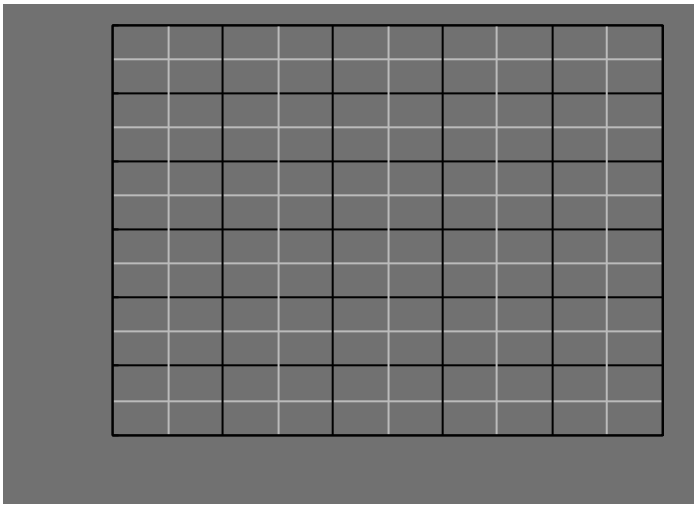


Figure 8. Forward characteristics of reverse diode





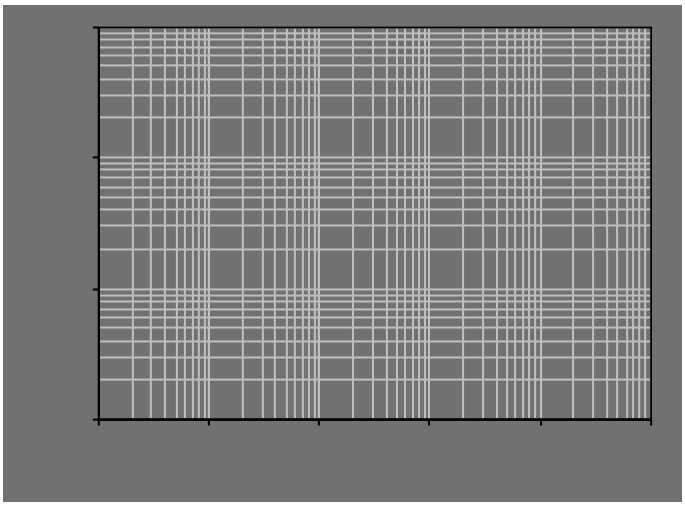
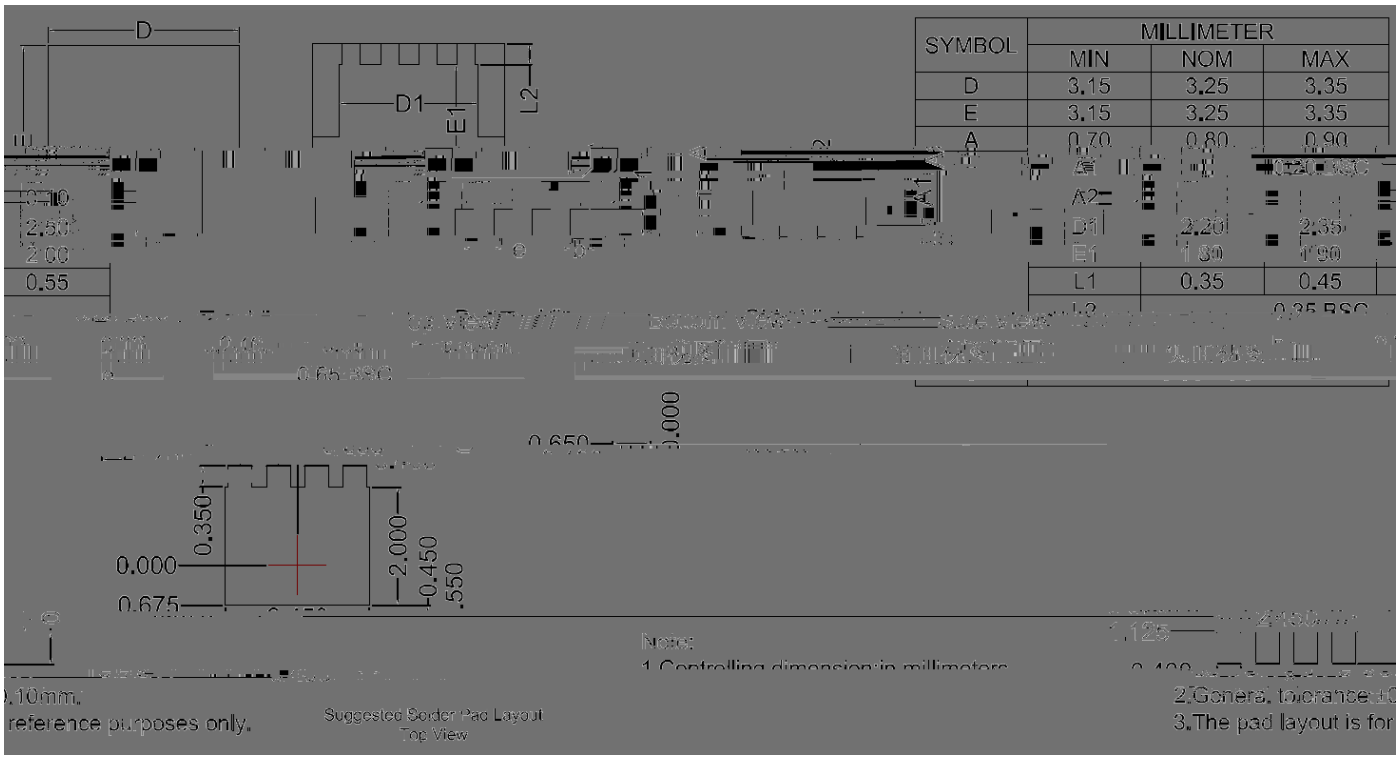


Figure 13. Maximum Transient Thermal Impedance

Figure 14. Safe Operation Area

■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			
D1		2.20	2.35
E1		1.80	1.90
L1	0.35	0.45	
L2		0.35 BSC	

Disclaimer

The information presented in this document is for reference onl