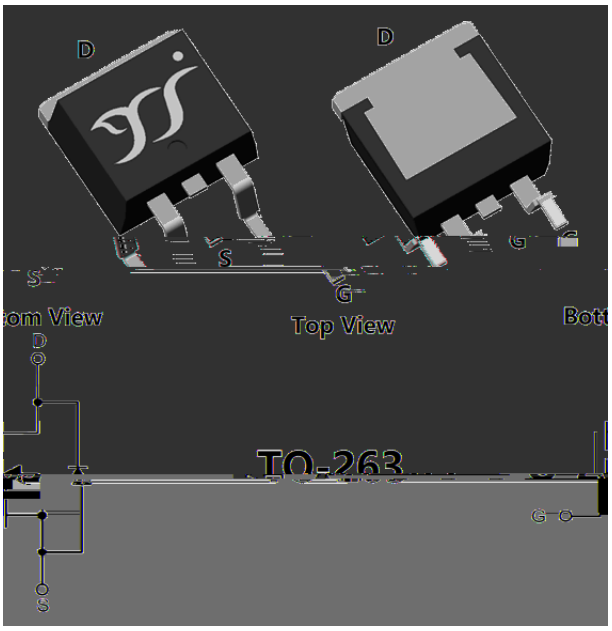
N-Channel Enhancement Mode Field Effect Transistor



Product Summary

- V_{DS} 60V
- I_D 95A
- $R_{DS(ON)}$(at V_{GS}=10V) 5.2mohm
- 100% EAS Tested
- 100% VDS Tested

General Description

- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free
- 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}	60	V
Gate-source Voltage		V_{GS}	±20	V
Drain Current	T_A=25	I_D	14	A
	T_A=100		10	
	T_C=25		95	
	T_C =100		70	
Pulsed Drain Current [A]		I_{DM}	380	A
Avalanche energy [B]		EAS	72	mJ
Total Power Dissipation [C]	T_A=25	P_D	3.3	W
	T_A=100		1.6	
	T_C=25		100	
	T_C =100		50	
Junction and Storage Temperature Range		T_J ,T_{STG}	-55 +175	

■Thermal resistance

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient [D]	Steady-State	$R_{\theta JA}$	35	45	/W
Thermal Resistance Junction-to-Case	Steady-State	$R_{\theta JC}$	1.2	1.5	

■ Ordering Information (Example)

PREFERED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJB95G06AQ	F2	YJB95G06A	800	/	8000	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
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			1	μA
Gate-Body Leakage Current	IGSS	V_{GS}=±20V, V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2	3	4	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=30A		5.5	6.5	mΩ
		V_{GS}=4.5V, I_D=20A		7.5	9	mΩ
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=30A		60		S
Diode Forward Voltage	V_{SD}	I_S=1A, V_{GS}=0V		0.7	1	V
Maximum Body-Diode Continuous Current	I_S				95	A
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=30V, f=1MHz		2500		pF
Output Capacitance	C_{oss}			350		pF
Reverse Transfer Capacitance	C_{rss}			200		pF
Gate resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz		1.5		Ω
Switching Parameters						
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=30V, I_D=30A		50		nC
Gate Source Charge	Q_{gs}			15		nC
Gate Drain Charge	Q_{gd}			10		nC
Turn-On Delay Time	$t_{D(on)}$	V_{GS}=10V, V_{DS}=30V, R_L=1Ω, R_{GEN}=3Ω		15		ns
Turn-On Rise Time	t_r			10		ns
Turn-Off Delay Time	$t_{D(off)}$			40		ns
Turn-Off Fall Time	t_f			10		ns
Body Diode Reverse Recovery Time	t_{rr}	I_F=30A, dI/dt=500A/μs		40		ns
Body Diode Reverse Recovery Charge	Q_{rr}	I_F=30A, dI/dt=500A/μs		50		nC

■Typical Electrical and Thermal Characteristics Diagrams

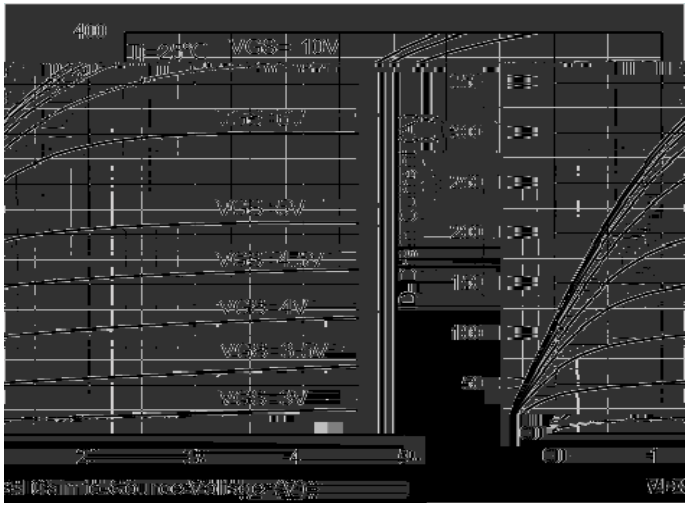


Figure1. Output Characteristics

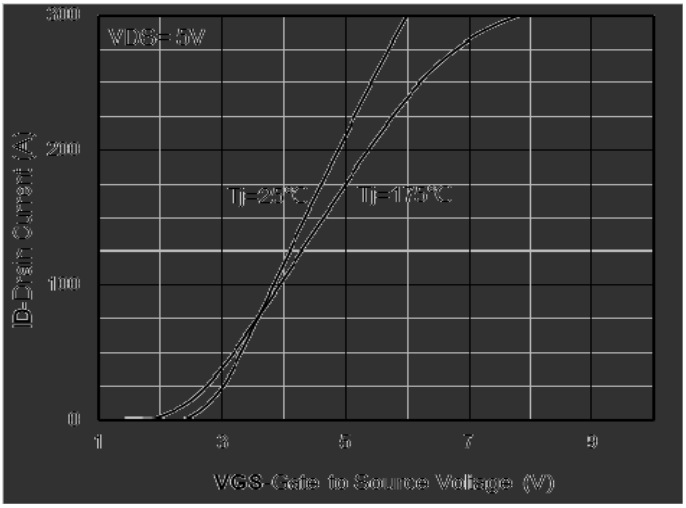


Figure2. Transfer Characteristic

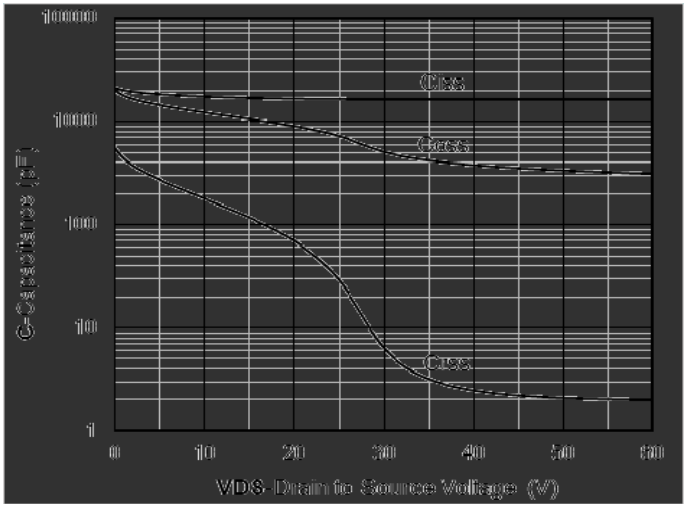


Figure3. Capacitance Characteristics

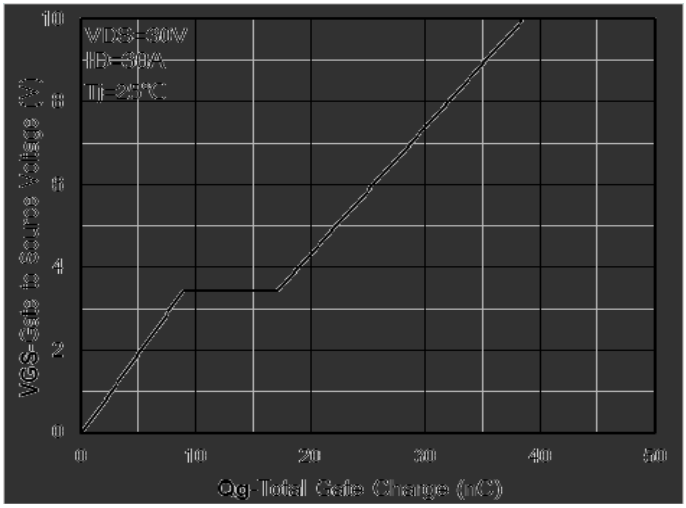


Figure4. Gate Charge

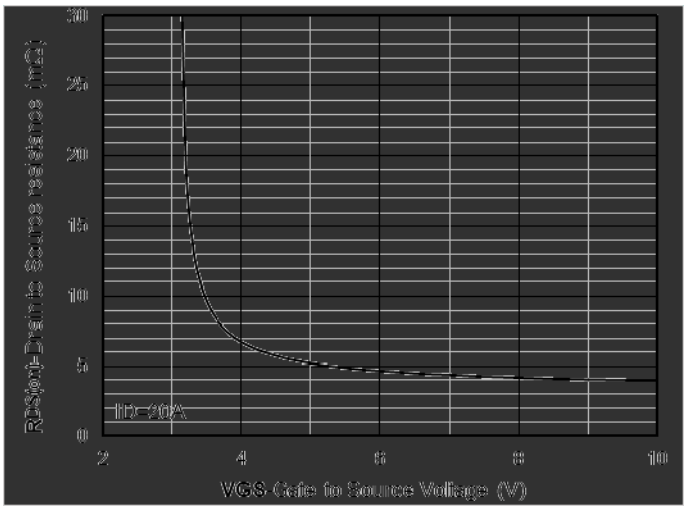


Figure5. On-Resistance vs Gate to Source Voltage

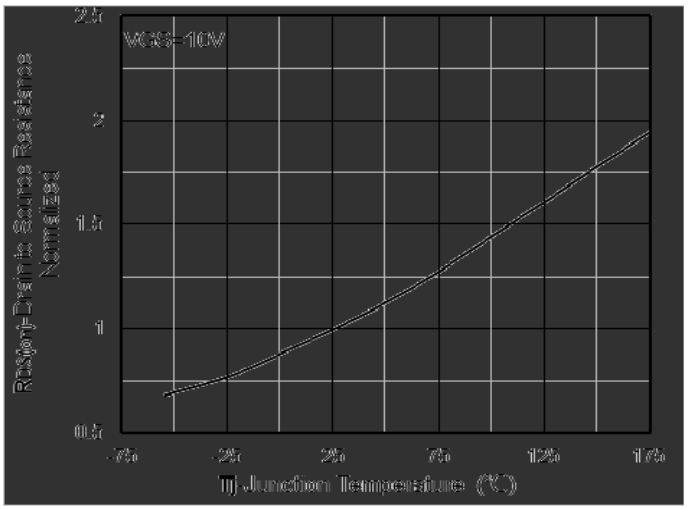


Figure6. Normalized On-Resistance

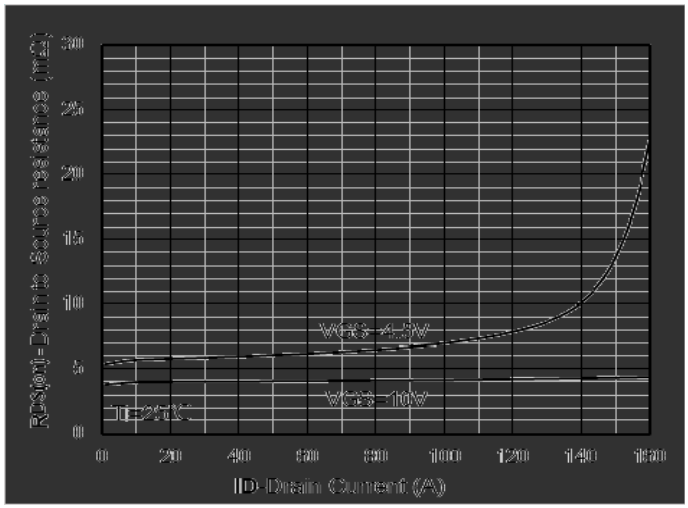


Figure7. $R_{DS(on)}$ VS Drain Current

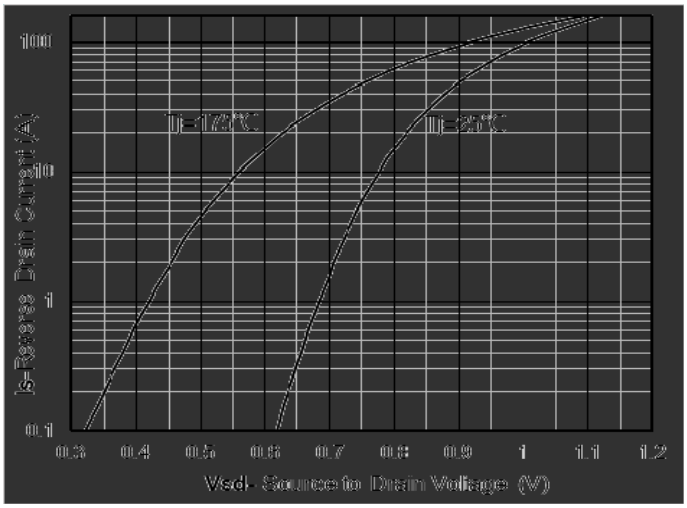


Figure8. Forward characteristics of reverse diode

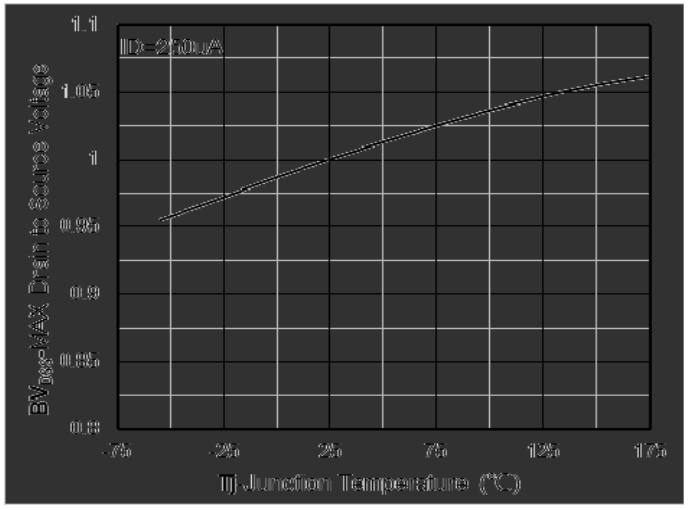


Figure9. Normalized breakdown voltage

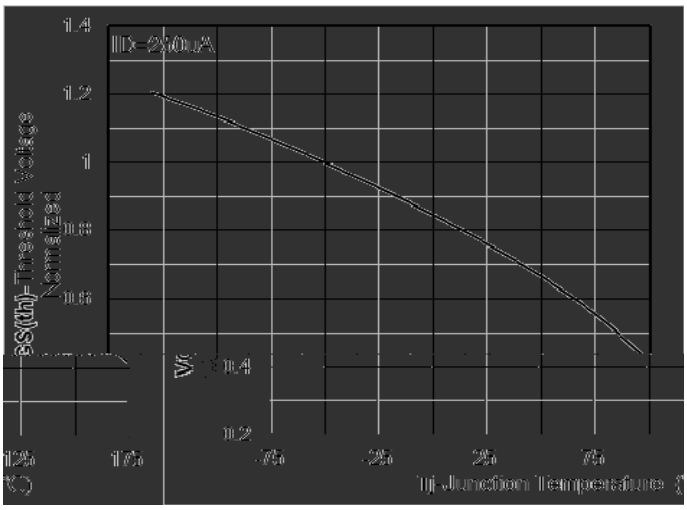


Figure10. Normalized Threshold voltage

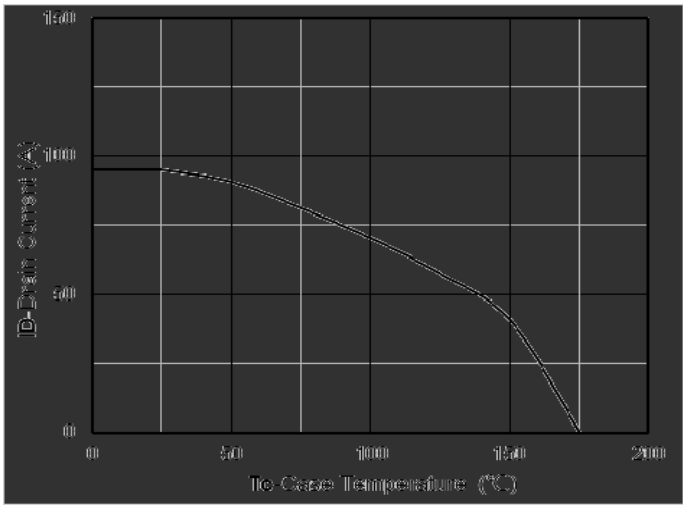


Figure11. Current dissipation

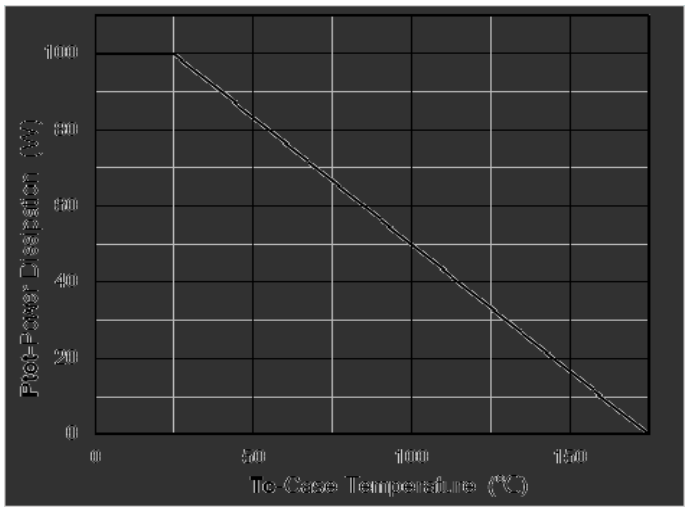


Figure12. Power dissipation

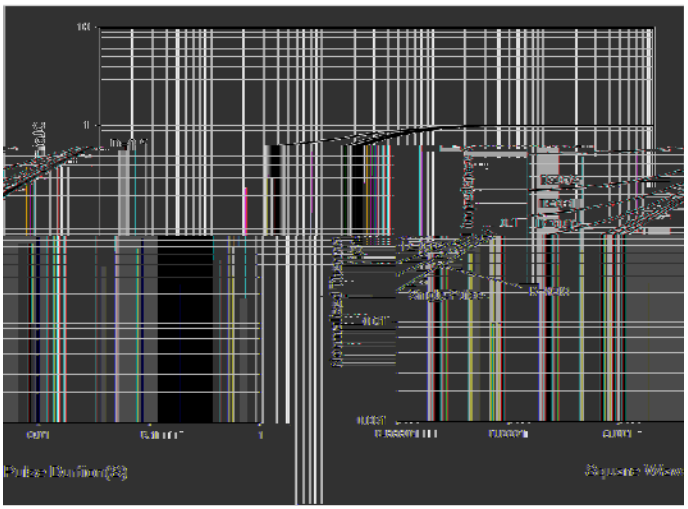


Figure13. Maximum Transient Thermal Impedance

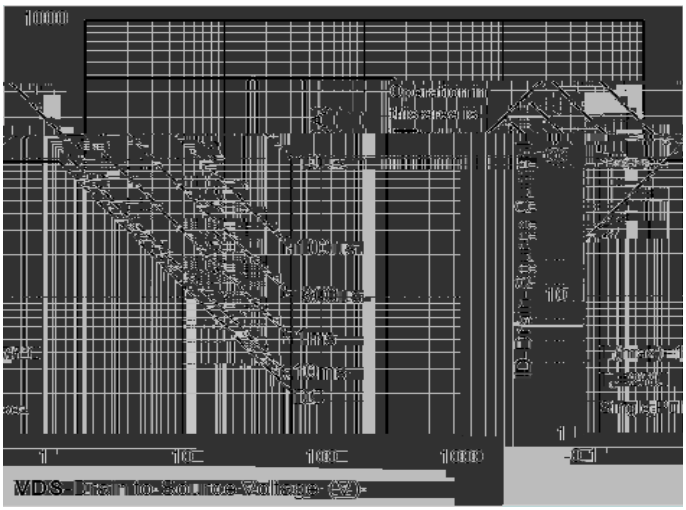
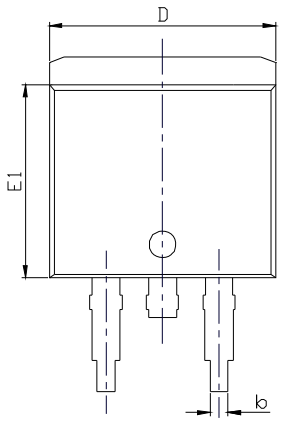
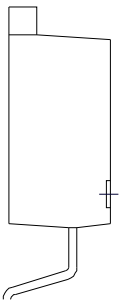


Figure14. Safe Operation Area

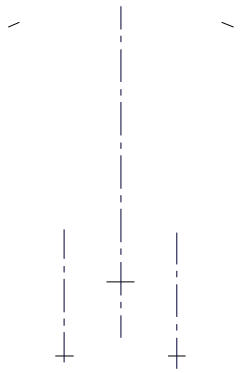
■ TO-263-HY Package information



TOP VIEW



SIDE VIEW



BOTTOM VIEW



UNIT mm

SYMBOL	DIMENSIONS					
	INCHES			Millimeter		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A1	0.000	---	0.010	0.000	---	0.250
A2	0.174	0.180	0.186	4.430	4.580	4.730
b	0.028	0.032	0.036	0.720	0.820	0.920
b2	0.046	0.050	0.054	1.180	1.280	1.380
c	0.013	0.015	0.018	0.330	0.390	0.450
c2	0.048	0.050	0.053	1.220	1.280	1.340
D1	0.295	0.307	0.319	7.500	7.800	8.100
D2	0.303	0.315	0.327	7.700	8.000	8.300
E	0.571	0.591	0.610	14.500	15.000	15.500
E1	0.337	0.341	0.348	8.550	8.700	8.850
E2	0.276	0.287	0.299	7.000	7.300	7.600
e	0.200BSC			5.080BSC		
L	0.070		0.110	1.790		2.790
L1	0.044	---	0.056	1.120	---	1.420
L2	0.030	---	0.070	0.770	---	1.770
L3	0.197REF			5.000REF		
	0°	---	8°	0°	---	8°

NOTE:
1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

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