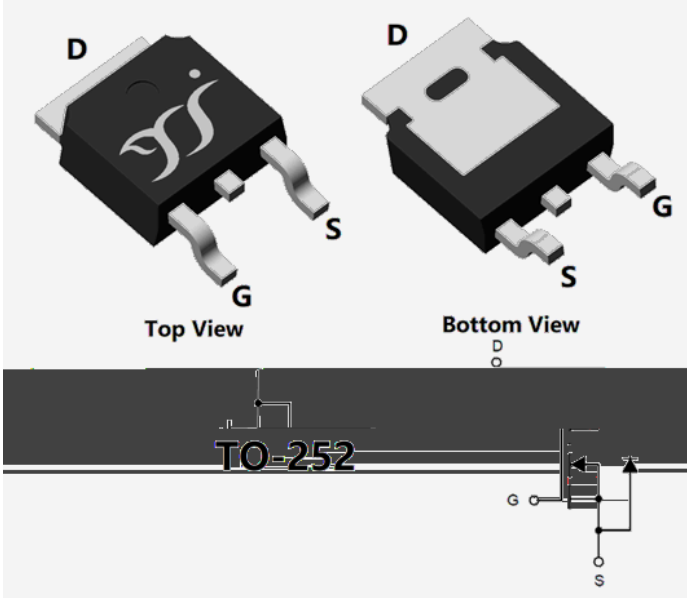


- V_{DS} 650V
- I_D 7A
- $R_{DS(ON)}$(at V_{GS}=10V) 600mΩ
- 100% EAS Tested
- 100% VDS Tested

- Super Junction High Voltage MOSFET technology
- Ultra Low Gate Charge Cause Lower Driving Requirement
- Low On-resistance and Low Conduction Loss
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free

- Switching Mode Power Supplies (SMPS)
- PWM Motor Controls
- LED Lighting
- Adapter

■

Drain-source Voltage			V_{DS}	-	650	V
Gate-source Voltage			V_{GS}	-30	30	
Continuous Drain Current (Note 1,2)	Steady-State	T_A=25 ,V_{GS}=10V	I_D	-	1.3	A
		T_A=100 ,V_{GS}=10V		-	0.8	
Continuous Drain Current (Note 1,3)	Steady-State	T_C=25 ,V_{GS}=10V		-	7	
		T_C =100 ,V_{GS}=10V		-	4.4	
Pulsed Drain Current	T_C=25 ,t_p≤10μs		I_{DM}	-	14	
Maximum Body-Diode Continuous Current	T_C=25		I_S		7	
Maximum Body-Diode Pulsed Current	T_C=25 ,t_p≤10μs		I_{SM}	-	14	
Avalanche Energy (non-repetitive)	T_J=25 ,V_G=10V,R_G=25Ω,L=30mH,I_{AS}=2.9A		EAS	-	126.15	mJ
Total Power Dissipation (Note 1,2)	Steady-State	T_A=25	P_D	-	2.5	W
		T_A=100		-	1	
Total Power Dissipation (Note 1,3)	Steady-State	T_C=25		-	73	
		T_C =100		-	29	
MOSFET dv/dt Ruggedness	T_J=25 ,V_{DS}=0…325V, ID<=4A,Rg=0Ω		dv/dt	-	26	V/ns
Reverse Diode dv/dt	T_J=25 ,V_{DS}=0…325V,ID<=4A,di/dt=200A/us		dv/dt	-	16	
Maximum Diode Commutation Speed	T_J=25 ,V_{DS}=0…325V,ID<=4A,Rg=0Ω		dif/dt	-	5000	A/us
Junction and Storage Temperature Range			T_J ,T_{STG}	-55	150	

■

Thermal Resistance Junction-to-Ambient (Note 2)	Steady-State	$R_{\theta JA}$	-	50	/W
Thermal Resistance Junction-to-Case	Steady-State	$R_{\theta JC}$	-	1.7	

■ (Example)

YJD600C65BHJ	F2	600C65BHJ	2500	/	25000	13“ reel

■

Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_D=250μA,Tj=25	650	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=650V,V_{GS}=0V,Tj=25	-	-	1	μA
		V_{DS}=650V,V_{GS}=0V,Tj=150	-	-	100	
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±30V,V_{DS}=0V,Tj=25	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA,Tj=25	2.9	3.7	4.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V,I_D=2.5A,Tj=25	-	500	600	mΩ
		V_{GS}=10V,I_D=2.5A,Tj=150	-	1200	1440	
Diode Forward Voltage	V_{SD}	I_S=2.5A,V_{GS}=0V,Tj=25	-	0.82	1.2	V
Gate Resistance	R_G	f=1MHz,Tj=25	-	6	-	Ω
Input Capacitance	C_{iss}	V_{DS}=325V,V_{GS}=0V,f=1MHz,Tj=25	-	414	-	pF
Output Capacitance	C_{oss}		-	17.5	-	
Reverse Transfer Capacitance	C_{rss}		-	3.5	-	
Effective Output capacitance, Energy Related	$C_{o(er)}$	V_{DS}=0…325V,V_{GS}=0V,f=1MHz, Tj=25	-	24	-	
Effective Output Capacitance, Time Related	$C_{o(tr)}$		-	150	-	
Total Gate Charge	Q_g	V_{GS}=10V,V_{DS}=325V,I_D=2.5A,Tj=25	-	12.1	-	nC
Gate-Source Charge	Q_{gs}		-	2.4	-	
Gate-Drain Charge	Q_{gd}		-	6.8	-	
Reverse Recovery Charge	Q_{rr}	I_F=2.5A,di/dt=100A/μs,V_{GS}=0V, V_R=325V,Tj=25	-	1105	-	nC
Reverse Recovery Time	t_{rr}		-	143	-	ns
Peak Reverse Recovery Current	I_{rrm}		-	15.5	-	A
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=10V,V_{DS}=325V,I_D=2.5A, R_{GEN}=2.7Ω,Tj=25	-	17	-	ns
Turn-on Rise Time	t_r		-	17	-	
Turn-off Delay Time	$t_{D(off)}$		-	26	-	
Turn-off Fall Time	t_f		-	50	-	

Note

1. The entire application environment impacts the thermal resistance values shown, they are not constants and are only valid for the particular conditions noted.
2. The value of $R_{\theta JA}$ is measured with the device mounted on the 40mm*40mm*1.1mm single layer FR-4 PCB board with 1 in^2 pad of 2oz. Copper, in the still air environment with T_A=25 .The maximum allowed junction temperature of 150 . The value in any given application depends on the user's specific board design.
3. Thermal resistance from junction to soldering point (on the exposed drain pad).

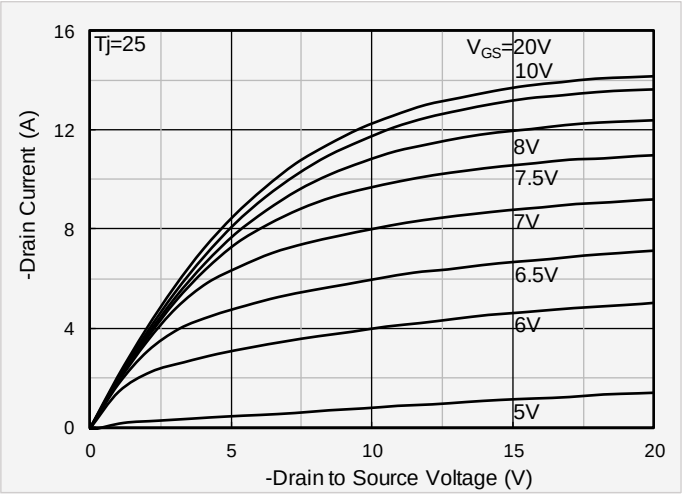


Figure 1. Output Characteristics; typical values

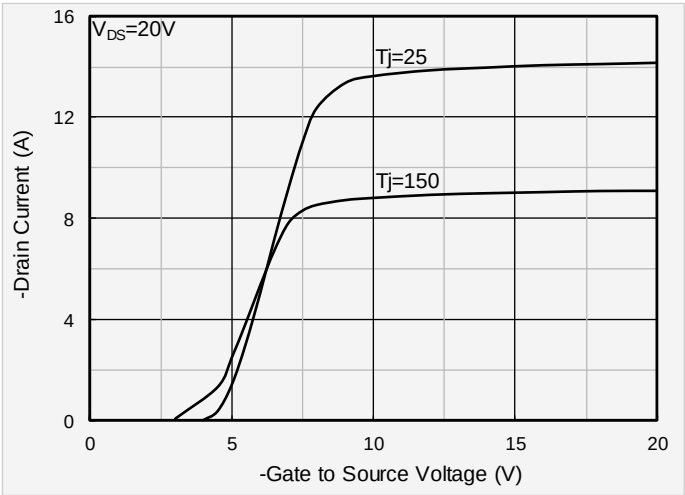
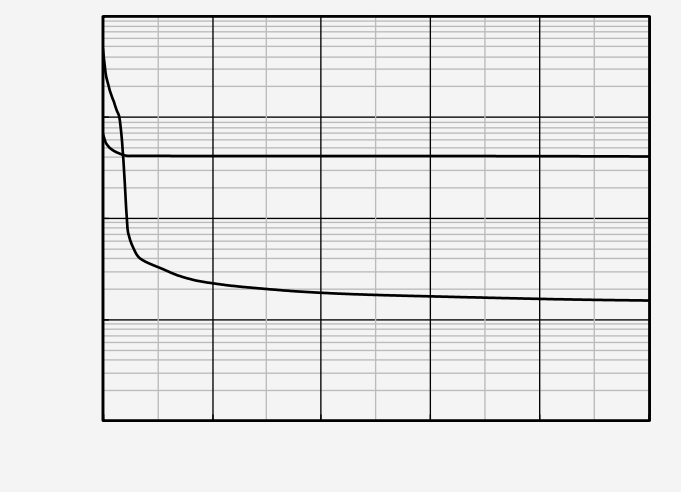
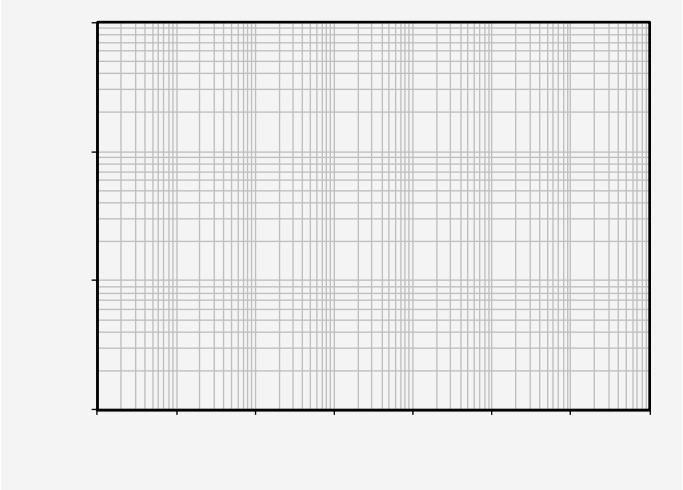


Figure 2. Transfer Characteristics; typical values





■

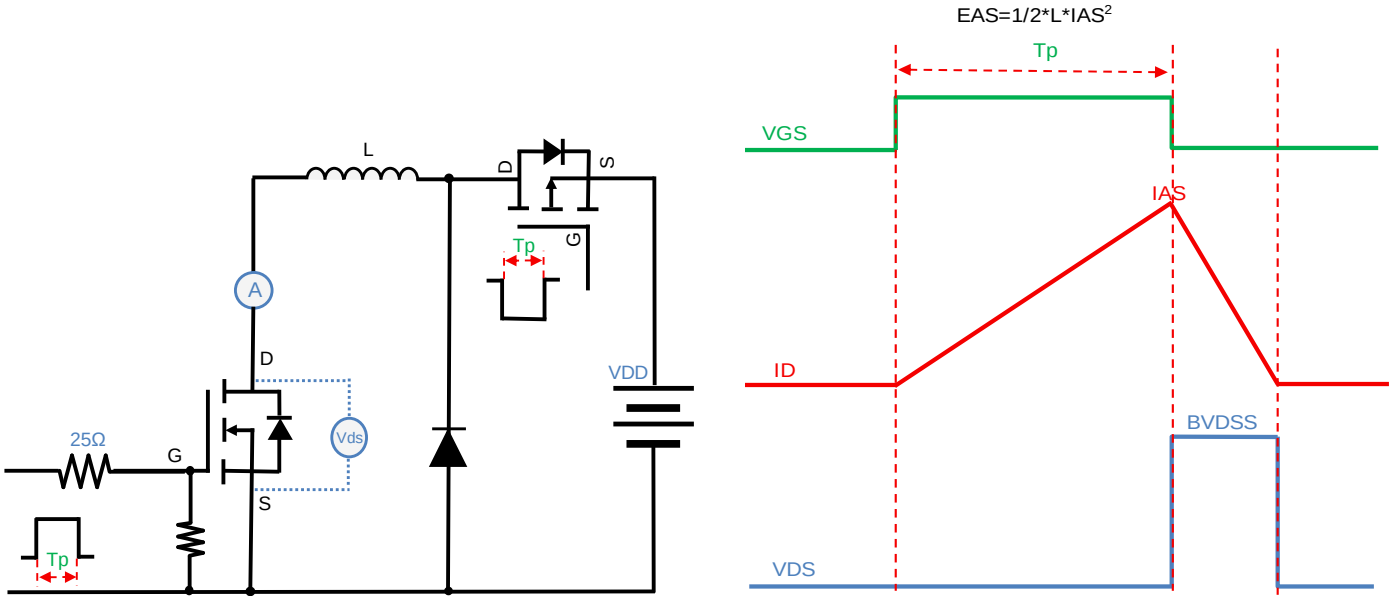


Figure A. Unclamped Inductive Switching (UIS) Test Circuit & Waveform

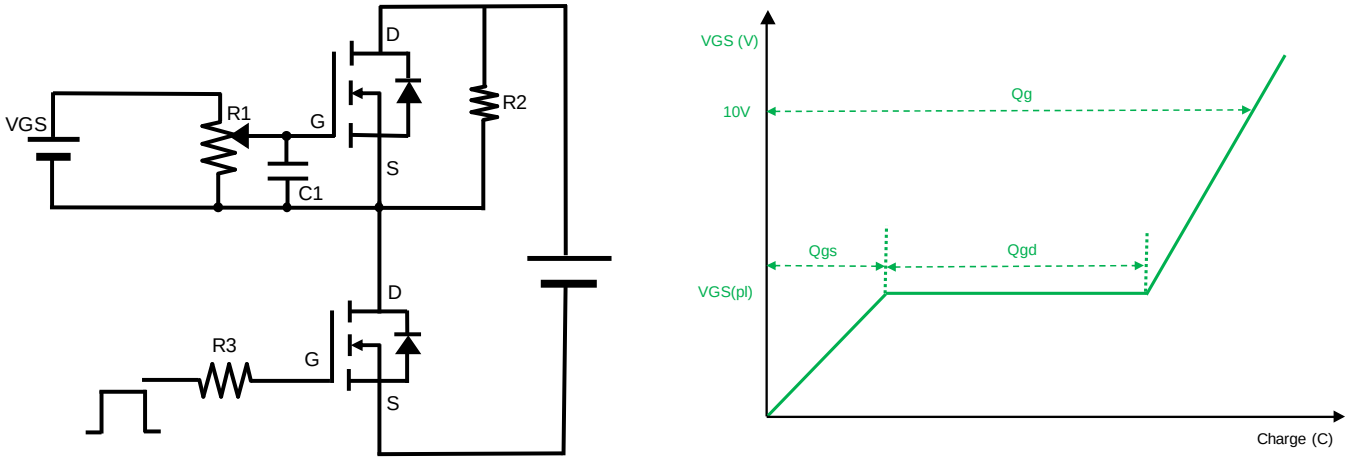


Figure B. Gate Charge Test Circuit & Waveform

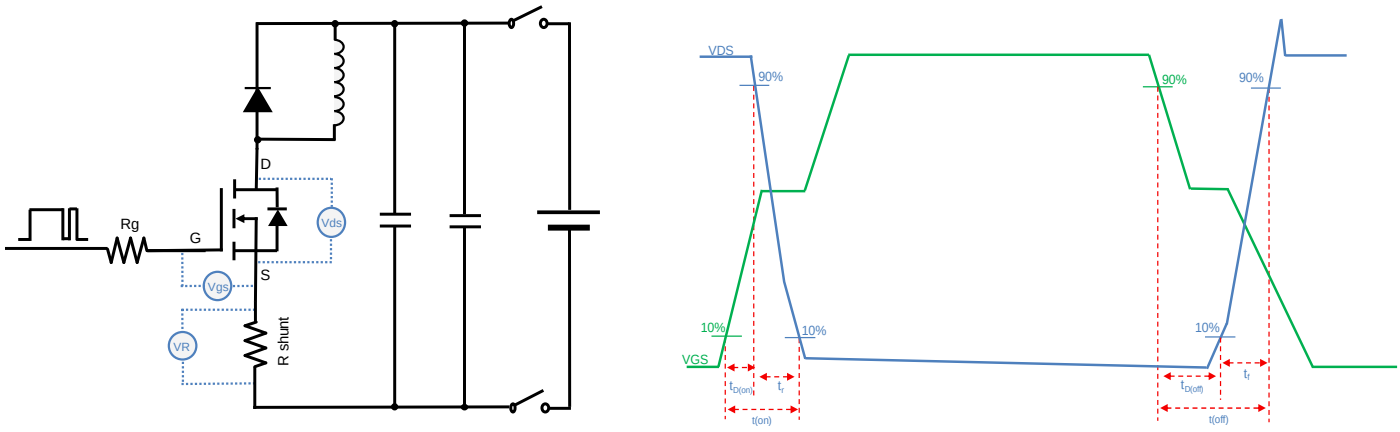


Figure C. Resistive Switching Test Circuit & Waveform

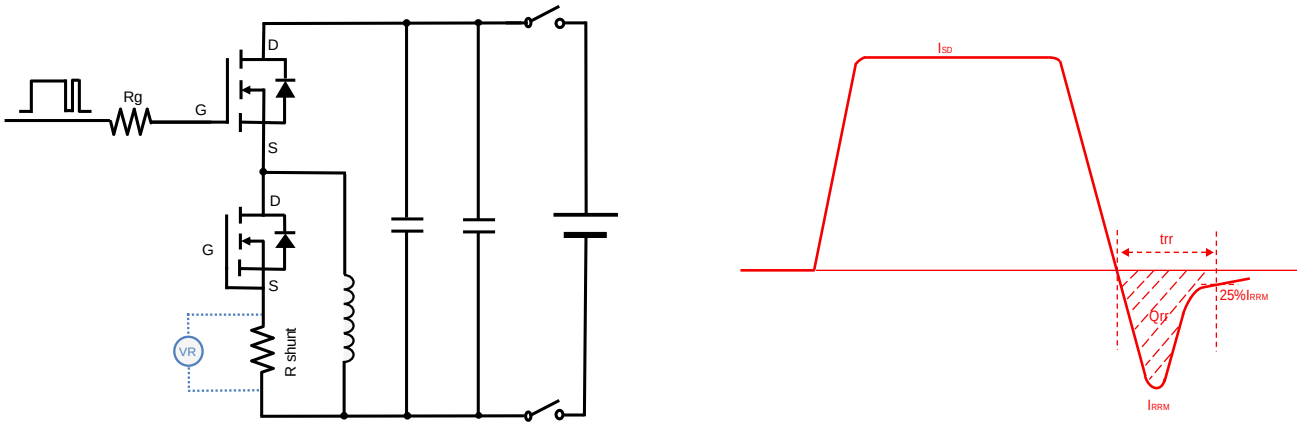
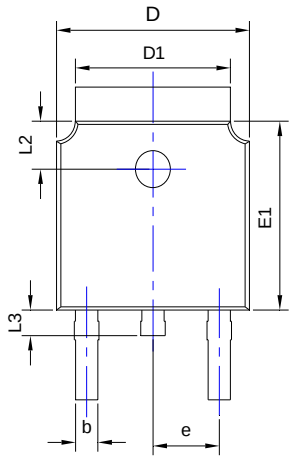
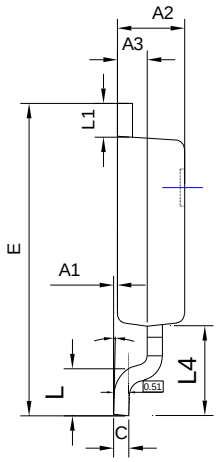


Figure D. Diode Recovery Test Circuit & Waveform

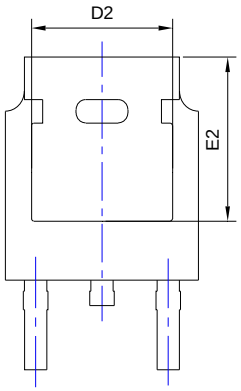
■



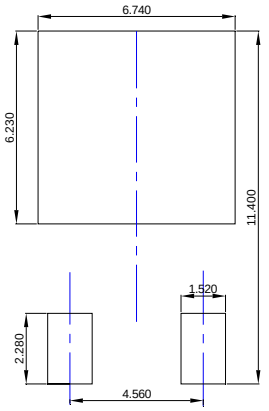
TOP VIEW



SIDE VIEW



BOTTOM VIEW



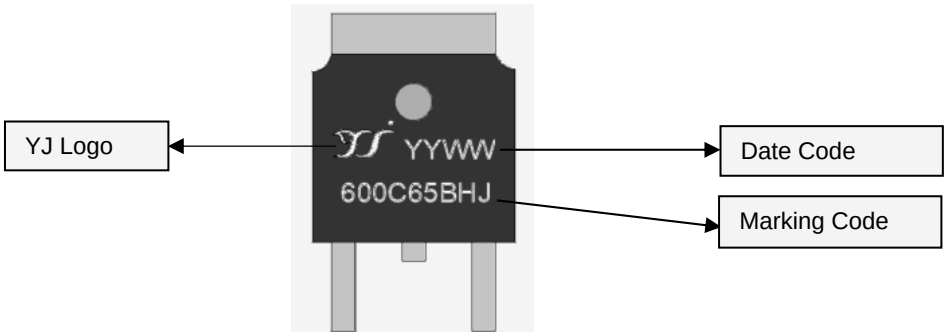
SUGGESTED SOLDER PAD LAYOUT

UNIT mm

DIMENSIONS						
SYMBOL	INCHES			Millimeter		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A1	0.000	---	0.008	0.000	---	0.200
A2	0.087	0.091	0.094	2.200	2.300	2.400
A3	0.035	0.039	0.043	0.900	1.000	1.100
b	0.026	0.030	0.034	0.660	0.760	0.860
c	0.018	0.020	0.023	0.460	0.520	0.580
D	0.256	0.260	0.264	6.500	6.600	6.700
D1	0.203	0.209	0.215	5.150	5.300	5.450
D2	0.181	0.189	0.195	4.600	4.800	4.950
E	0.390	0.398	0.406	9.900	10.100	10.300
E1	0.236	0.240	0.244	6.000	6.100	6.200
E2	0.203	0.209	0.215	5.150	5.300	5.450
e	0.090BSC			2.286BSC		
L	0.049	0.059	0.069	1.250	1.500	1.750
L1	0.035	---	0.050	0.900	---	1.270
L2	0.055	---	0.075	1.400	---	1.900
L3	0.024	0.031	0.039	0.600	0.800	1.000
L4	0.114REF			2.900REF		
	0°	---	10°	0°	---	10°

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.

■



Note
1. All marking is at middle of the product body
2. All marking is in laser printing
3. 600C65BHJ is marking code, YYWW is date code, “YY” is year, “WW” is week
4. Body color: Black

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1.0	2025.5.22	New release	Haijun Ding