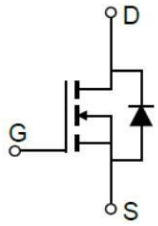
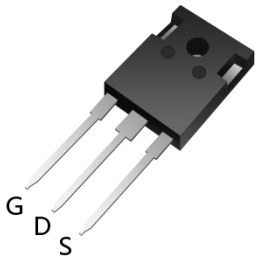
N-Channel Super Junction MOSFET

Parameter	Value	Unit
V_{DS}	650	V
$R_{DS(on)}$	85	mΩ
I_D	35	A





TO-247-3

Features

- Super Low Gate Charge
- 100% EAS Guaranteed
- Excellent CdV/dt effect decline
- Advanced trench gate super junction technology

Applications

- LED/LCD/PDP TV and monitor lighting
- Solar/UPS micro-inverter systems
- Battery chargers
- Power supplies

Absolute Maximum Ratings(Ta=25℃,unless otherwise noted)

Parameter	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	650	V
Gate-Source Voltage	V_{GS}	±30	V
Drain Current - Continuous	I_D	35	A
Drain Current - Pulsed (Note 1)	I_{DM}	150	A
Single Pulsed Avalanche Energy (Note 1)	E_{AS}	992	mJ
Power Dissipation (T_C=25℃)	P_D	302	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	℃

Note1:Pulse test: 300μs pulse width, 2% duty cycle

Thermal Resistance

Parameter	Symbol	Value	Unit
Thermal resistance, junction – case. Max	R_{thJC}	0.36	℃/W
Thermal resistance, junction – ambient. Max	R_{thJA}	63	

Electrical Characteristics(TJ=25℃,unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=250uA	650			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=650V, V_{GS}=0V			1	μA
Gate Leakage Current	I_{GSS}	V_{GS}=±30V, V_{DS}=0V			±100	nA
Gate Threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250uA	2.9		4.9	V
Drain-Source on-state resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=17A		85	99	mΩ
Input capacitance	C_{iss}	V_{DS}=100V, V_{GS}=0V, f=1MHz		1180		pF
Output capacitance	C_{oss}			115		pF
Reverse capacitance	C_{rss}			2		pF
Turn On Delay Time	$t_{d(on)}$	V_{DS}=400V, I_D= 17A, R_{GEN}=27Ω		50		ns
Rise Time	t_r			80		ns
Turn Off Delay Time	$t_{d(off)}$			179		ns
Fall Time	t_f			50		ns
Total Gate Charge	Q_g	V_{DS}=480V, I_D=17A, V_{GS}=10V		69		nC
Gate-Source Charge	Q_{gs}			17		nC
Gate-Drain Charge	Q_{gd}			45		nC
Maximum Continuous Body-Diode Forward Current	I_S				35	A
Maximum Pulsed Body-Diode Forward Current	I_{SM}				150	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=17A,T_J=25℃			1.5	V
Reverse recovery charge	Q_{rr}	V_{DS}=400V, I_F=17A di/dt=100A/μS		0.9		nC
Reverse recovery time	T_{rr}			140		ns

Note1:Pulse test: 300μs pulse width, 2% duty cycle

Typical Characteristics

Fig 1. Output Characteristics (Tj=25℃)

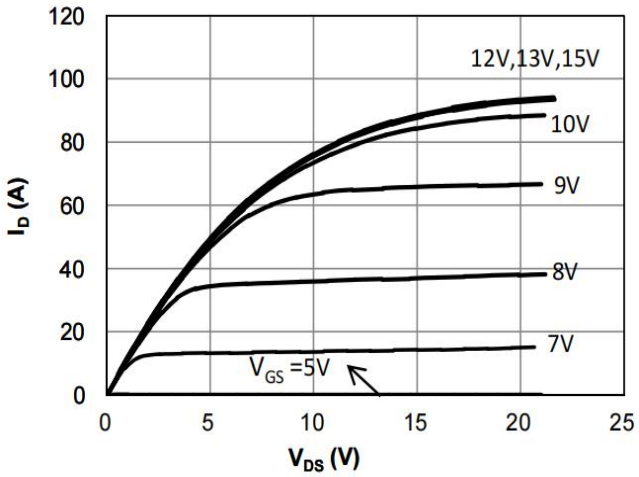


Fig 2. Output Characteristics (Tj=150℃)

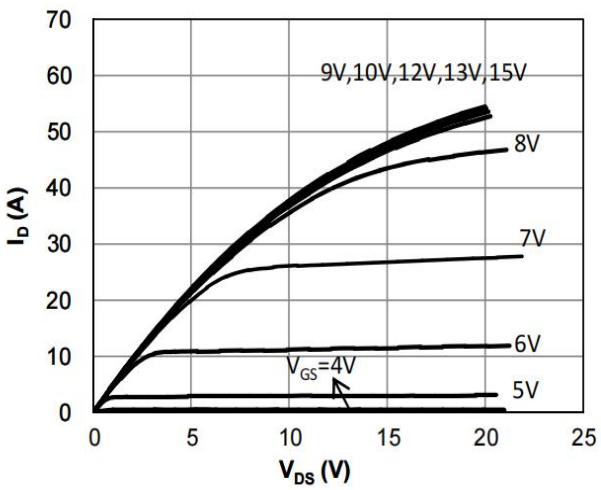


Fig 3: Transfer Characteristics

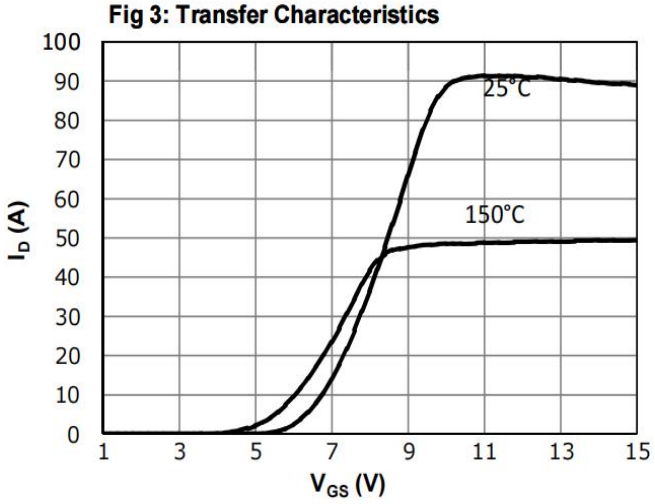


Fig 4: V_{TH} Vs Tj Temperature Characteristics

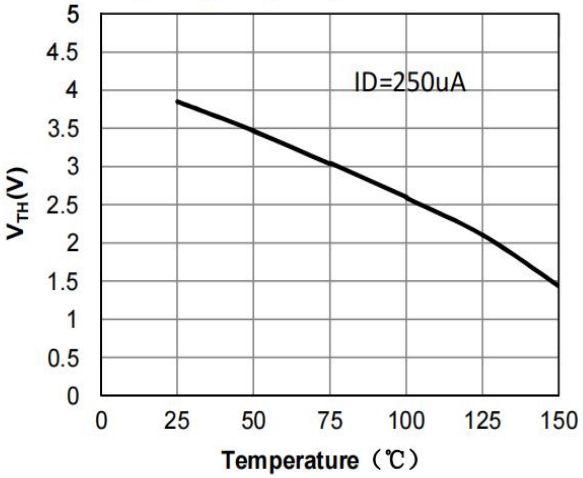


Fig 5: Rdson Vs Ids Characteristics(Tj=25℃)

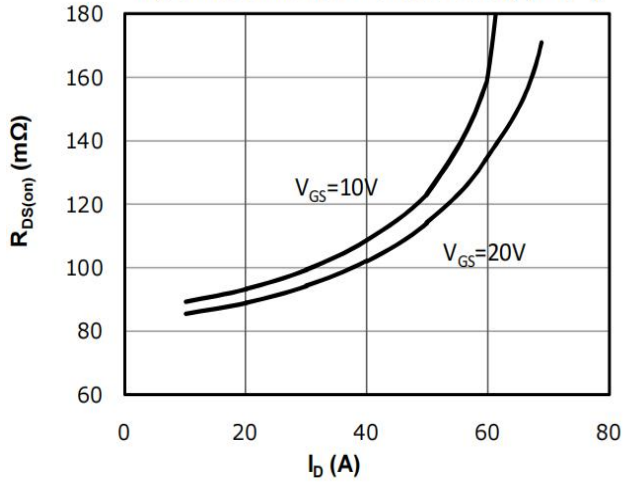


Fig 6: Rds(on) vs. Temperature

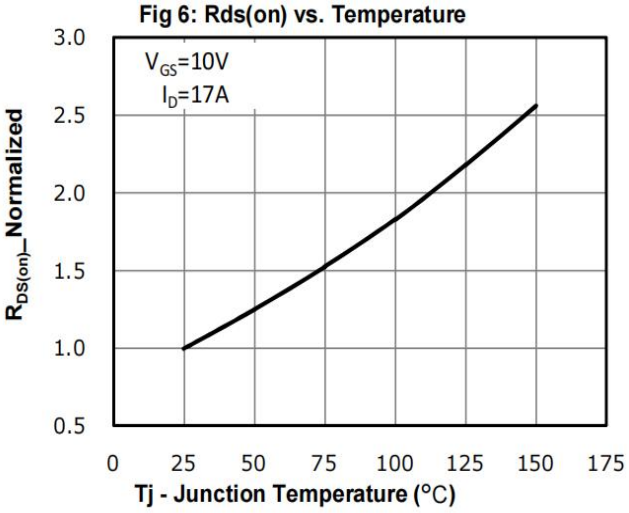


Fig 7: BVDSS vs. Temperature

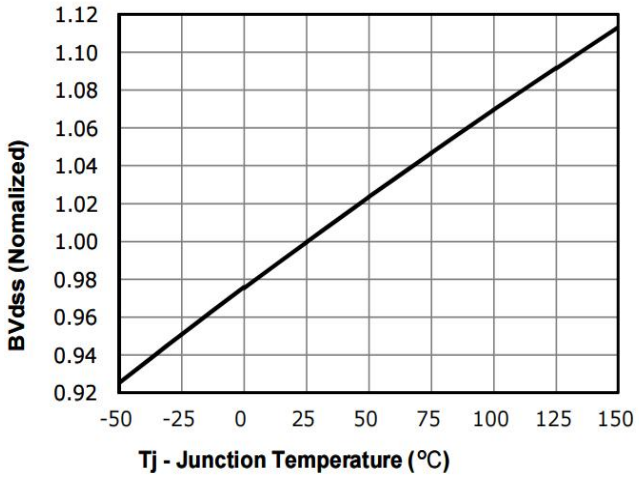


Fig 8: Rds(on) vs Gate Voltage

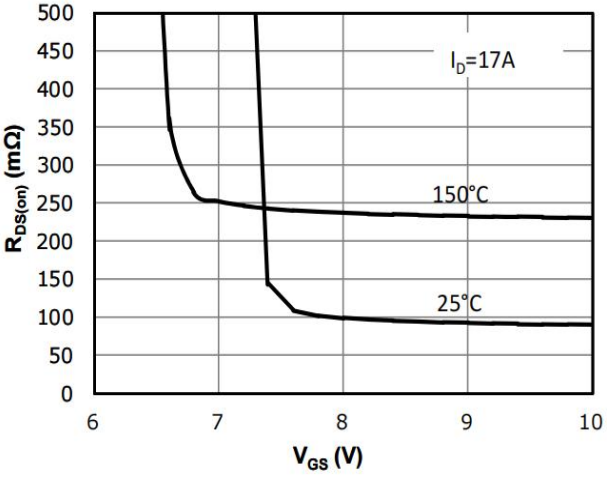


Fig 9: Body-diode Forward Characteristics

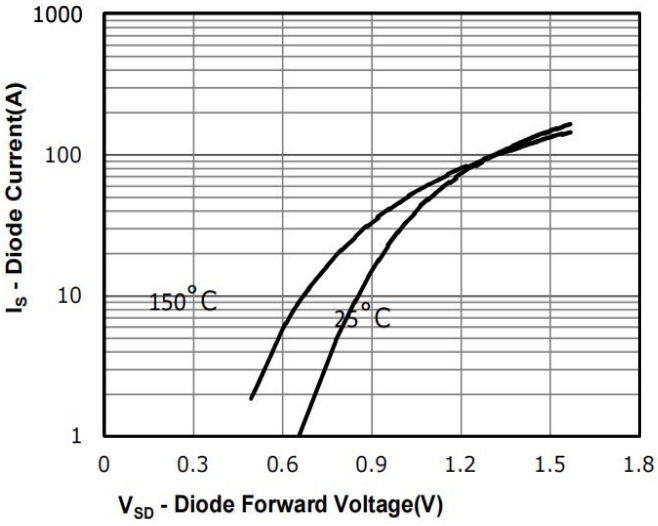


Fig 10: Gate Charge Characteristics

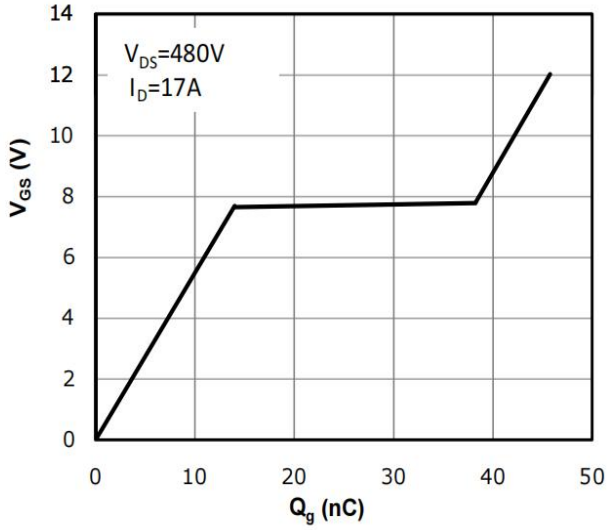


Fig 11: Capacitance Characteristics

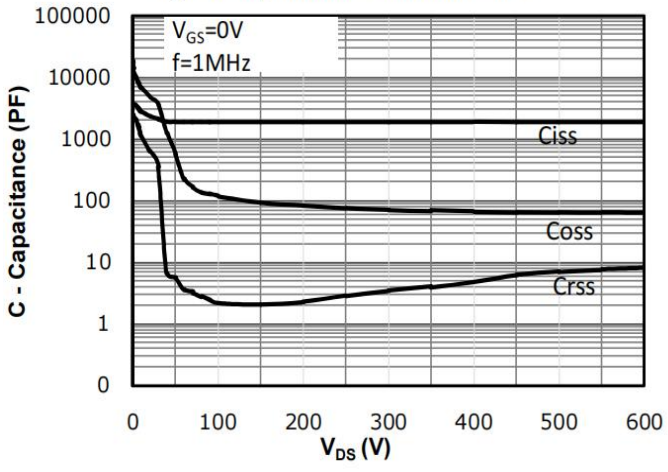
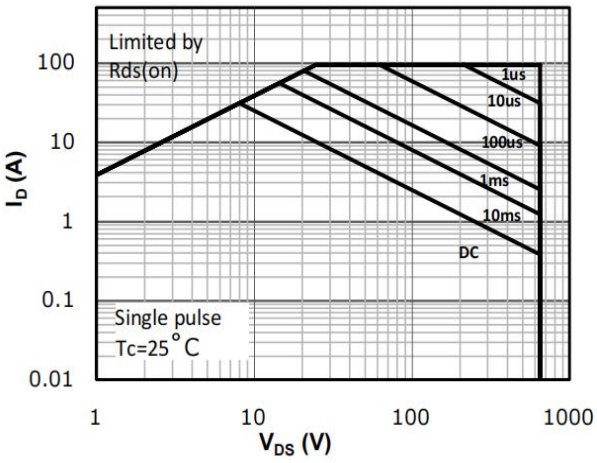
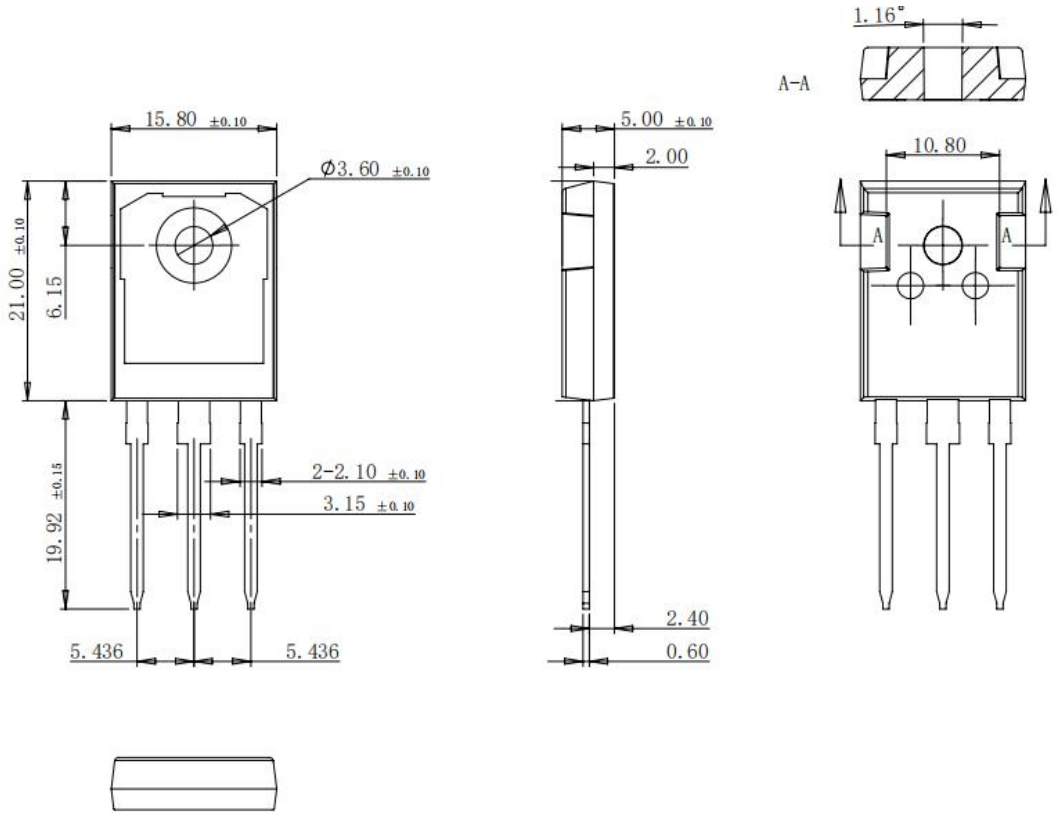


Fig 12: Safe Operating Area



Package Outline

TO-247-3



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