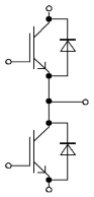
ASGH200S17SM

62mm module with trench FS IGBT

FEATURES

- High efficiency
- Low stray inductance design
- Optimized for fast switching
- Maximum junction temperature 175℃
- RoHS compliant

AS62



RoHS COMPLIANT

HALOGEN FREE AVAILABLE

MECHANICAL DATA

- Case: AS62
- Case material: UL flammability classification rating 94V-0

MAXIMUM RATINGS, IGBT

T_{vj}=25℃ unless otherwise noted

Parameter	Symbol	Value	Unit
Collector-emitter Voltage@T_{vj} = 25°C	V_{CES}	1700	V
Continuous Collector Current @T_C=100℃,$T_{vj\ max}$ = 175°C	I_C	200	A
Pulsed Collector Current, tp = 1ms	I_{CRM}	400	A
Power Dissipation @T_C=25℃, $T_{vj\ max}$ = 175°C	P_{tot}	1666	W
Gate-emitter Peak Voltage	V_{GES}	±20	V
Temperature Under Switching Conditions	T_{vjop}	-40 to +150	°C

CHARACTERISTICS, IGBT

T_{vj}=25℃ unless otherwise noted

Parameter	Test Conditions	Symbol	Value			Unit
			Min.	Nom.	Max.	
Collector-emitter Saturation Voltage	V_{GE}=15V, I_C=200A	$V_{CE(sat)}$	-	2.1	-	V
Gate Threshold Voltage	V_{GE}=V_{CE}, I_C=8mA,	$V_{GE(th)}$	4.8	5.8	6.8	V
Collector-emitter Leakage Current	V_{CE}=1700V, V_{GE}=0V	I_{CES}	-	-	2	mA
Gate Leakage Current	V_{GE}=±20 V, V_{CE}=0V	I_{GES}	-	-	±200	nA
Input Capacitance	V_{CE}=25V, V_{GE}=0V f =1MHz	C_{ies}	-	18.7	-	nF
Reverse Transfer Capacitance		C_{res}	-	0.58	-	
Internal Gate Resistor		R_{Gint}	-	4.6	-	Ω
Turn-on Delay Time	V_{CC}=900 V, V_{GE}=-15/15 V, I_C=200 A, R_G=3.3 Ω, Inductive load T_{vj}=25℃	$t_{d(on)}$	-	196	-	ns
Rise Time		t_r	-	88	-	
Turn-off Delay Time		$t_{d(off)}$	-	484	-	
Fall Time		t_f	-	421	-	
Turn-on Energy		E_{on}	-	58.1	-	mJ
Turn-off Energy		E_{off}	-	38	-	
Short Circuit Withstand Time	V_{CC}=900V, V_{GE}≤15V	t_{sc}	-	10	-	μs
Thermal Resistance, junction to case		$R_{th(j-c)}$	-	-	0.09	K/ W
Thermal Resistance, junction to heatsink		$R_{th(j-h)}$	-	0.04	-	K/ W

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MAXIMUM RATINGS, Diode

T_{vj}=25℃ unless otherwise noted

Parameter	Test Conditions	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	T_{vj}=25°C	V_{RRM}	1700	V
Continuous DC Forward Current	T_C=100°C	I_F	200	A
Repetitive Peak Forward Current	t_P=1 ms	I_{FRM}	400	A
Temperature Under Switching Conditions		T_{vjop}	-40 to +150	A

CHARACTERISTICS, Diode

T_{vj}=25℃ unless otherwise noted

Parameter	Test Condition	Symbol	Value			Unit
			Min.	Nom.	Max.	
Diode Forward Voltage	I_F=200A, V_{GE}=0 V, T_{vj}=25℃	V_F	-	1.78	-	V
Peak Reverse Recovery Current	I_F=200A,V_R=900 V, V_{GE}=-15V, R_G=3.3Ω T_{vj}=25°C	I_{RR}	-	177	-	A
Recovered Charge		Q_{RR}	-	35.7	-	μC
Reverse Recovery Energy		E_{rec}	-	21.9	-	mJ
Thermal Resistance, junction to case		$R_{th(j-c)}$	-	-	0.15	K/ W
Thermal Resistance, junction to heatsink		$R_{th(j-h)}$	-	0.04	-	K/ W

CHARACTERISTICS, Module

T_{vj}=25℃ unless otherwise noted

Parameter	Test Condition	Symbol	Value			Unit
			Min.	Nom.	Max.	
Isolation Test Voltage	RMS, f=50Hz, t=1min	V_{ISOL}	4	-	-	kW
Mounting Torque	Mounting Screw:M6	M	3.0	-	5.0	K/ W
Weight		G	-	320	-	g
Storage Temperature Range		T_{stg}	-40 to +150			K/ W

RATINGS AND CHARACTERISTIC CURVES

$I_C=f(V_{CE})$

$V_{GE}=15V$

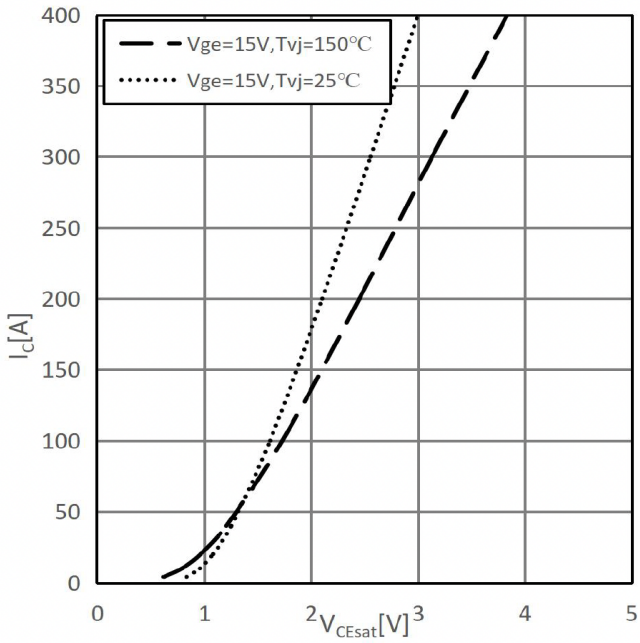

Fig 1. Output characteristic, IGBT

$I_C=f(V_{CE})$

$T_{vj}=150°C$

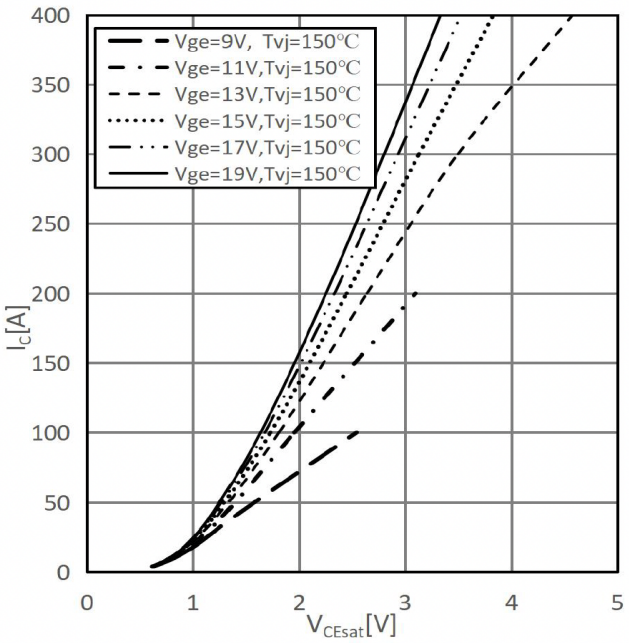

Fig 2. Output characteristic, IGBT

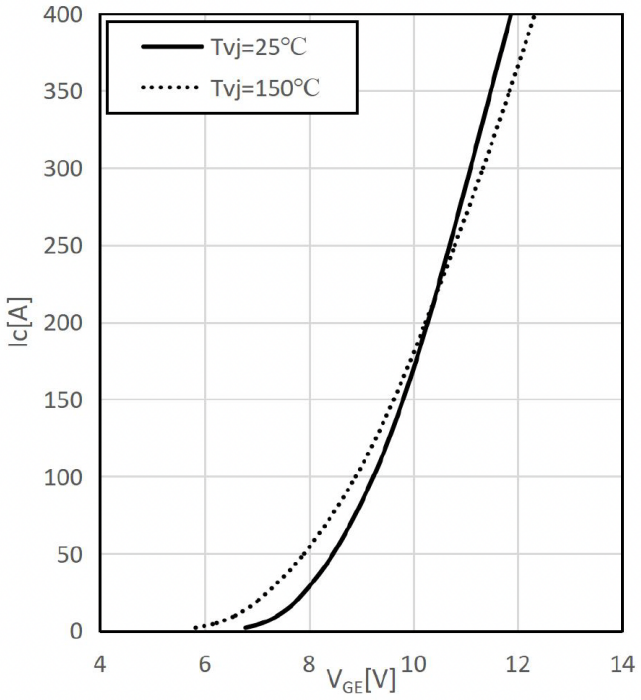

Fig 3. Transfer characteristic, IGBT

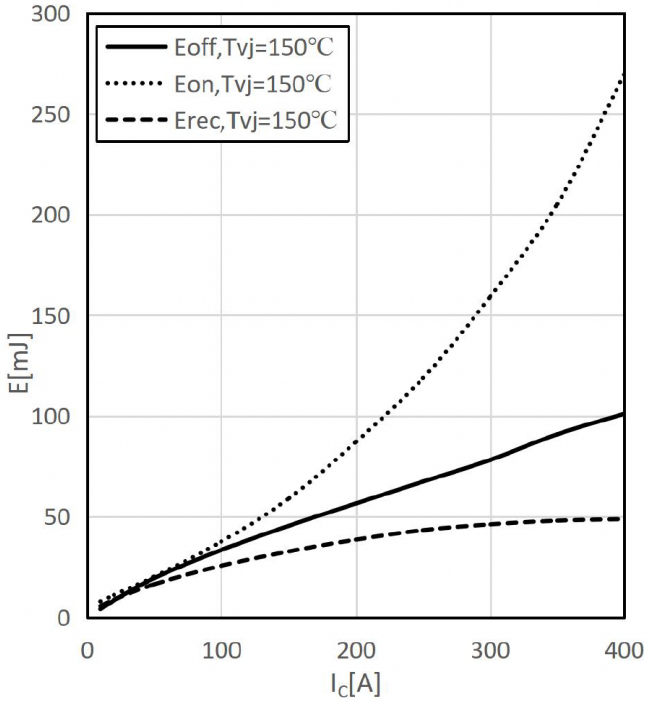

Fig 4. Switching losses

RATINGS AND CHARACTERISTIC CURVES

$E_{on}=f(R_G)$, $E_{off}=f(R_G)$,$E_{rec}=f(R_G)$

$V_{GE}=\pm15V$,$I_C=200A$,$V_{CE}=900V$, $T_{vj}=150℃$

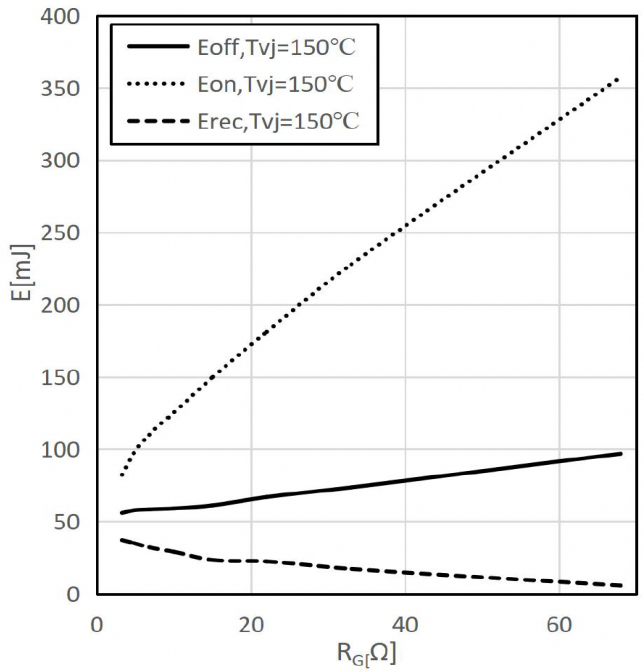

Fig 5. Switching losses

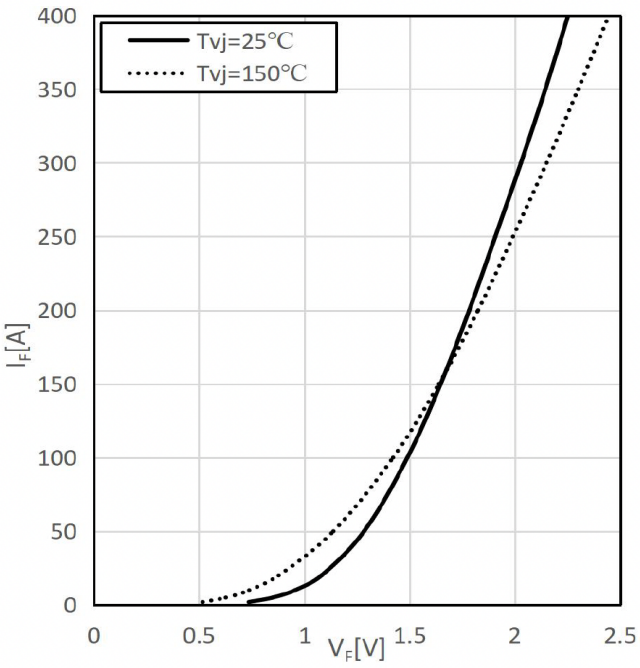

Fig 6. Forward characteristic, Diode

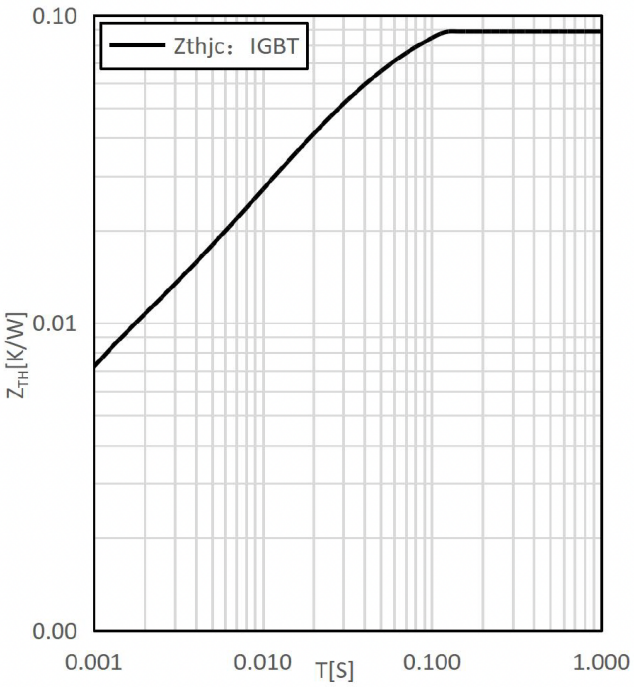

Fig 7. Transient thermal impedance, IGBT

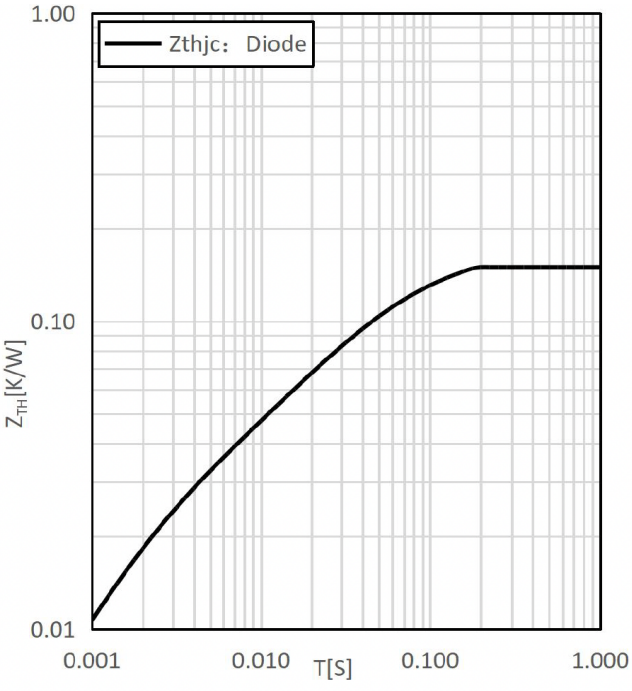

Fig 8. Transient thermal impedance, Diode

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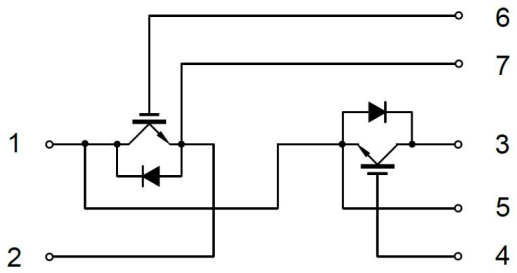
PACKAGE OUTLINE DIMENSIONS



PACKAGE OUTLINE DIMENSIONS