



AFGH4L60T120RWD iSTD

THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction to Case for IGBT	R_{JC}	0.26	$^{\circ}\text{C}/\text{W}$
Thermal Resistance, Junction to Case for Diode	R_{JCD}	0.46	
Thermal Resistance, Junction to Ambient	R_{JA}	40	

ELECTRICAL CHARACTERISTICS ($T_J = 25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector to Emitter Breakdown Voltage	BV_{CES}	$V_{GE} = 0\text{ V}, I_C = 1\text{ mA}$	1200	\bar{i}	\bar{i}	V
Breakdown Voltage Temperature Coefficient	BV_{CES}/T_J	$V_{GE} = 0\text{ V}, I_C = 9.99\text{ mA}$	\bar{i}	1226	\bar{i}	$\text{mV}/^{\circ}\text{C}$
Collector to Emitter Cut Off Current	I_{CES}	$V_{GE} = 0\text{ V}, V_{CE} = V_{CES}$	\bar{i}	\bar{i}	40	A
Gate to Emitter Leakage Current	I_{GES}	$V_{GE} = \pm 20\text{ V}, V_{CE} = 0\text{ V}$	\bar{i}	\bar{i}	r400	nA

ON CHARACTERISTICS

Gate to Emitter Threshold Voltage	$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = 60\text{ mA}$	5.1	6	6.9	V
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$V_{GE} = 15\text{ V}, I_C = 60\text{ A}, T_J = 25^{\circ}\text{C}$	\bar{i}	1.68	2.01	V
		$V_{GE} = 15\text{ V}, I_C = 60\text{ A}, T_J = 175^{\circ}\text{C}$	\bar{i}	2.18	\bar{i}	

DYNAMIC CHARACTERISTICS

Input Capacitance	C_{IES}	$V_{CE} = 30\text{ V}, V_{GE} = 0\text{ V}, f = 1\text{ MHz}$	\bar{i}	5252	\bar{i}	pF
Output Capacitance	C_{OES}		\bar{i}	175	\bar{i}	

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TYPICAL CHARACTERISTICS

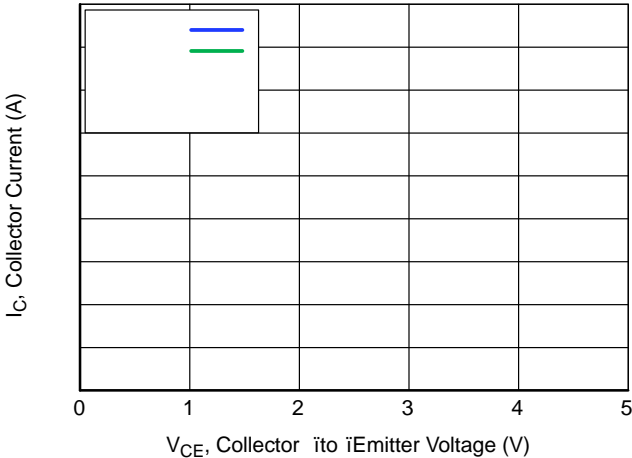


Figure 1. Typical Output Characteristics

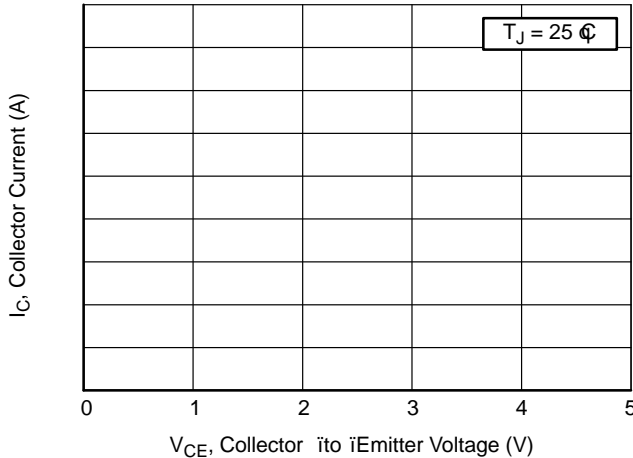


Figure 2. Typical Output Characteristics

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TYPICAL CHARACTERISTICS

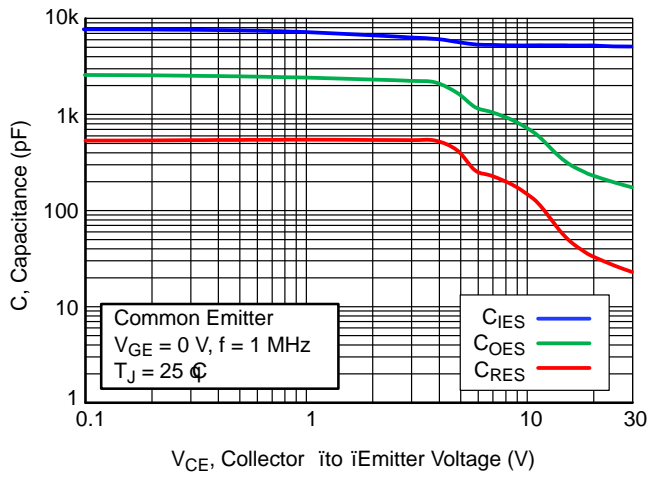


Figure 7. Capacitance Characteristics

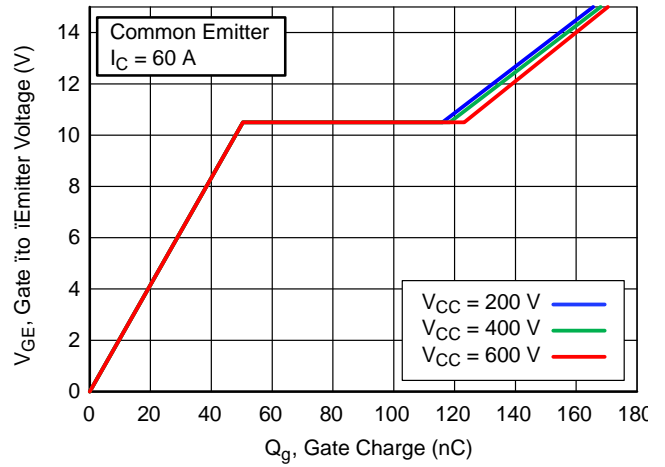


Figure 8. Gate Charge Characteristics

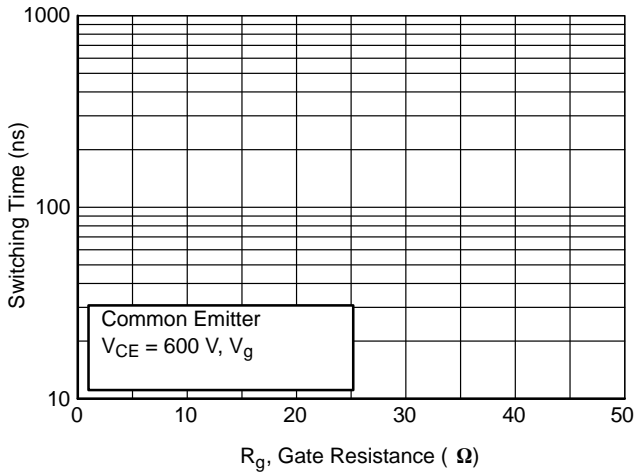
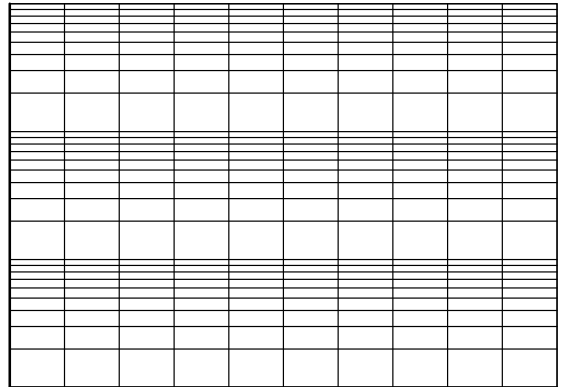


Figure 9. Switching Time vs. Gate Resistance



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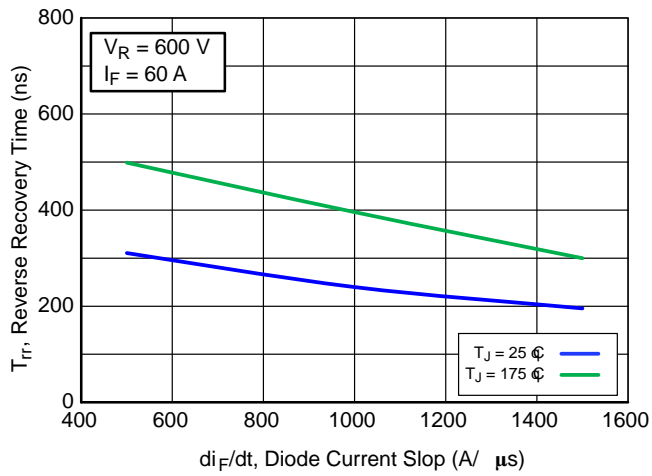


Figure 19. Diode Reverse Recovery Time

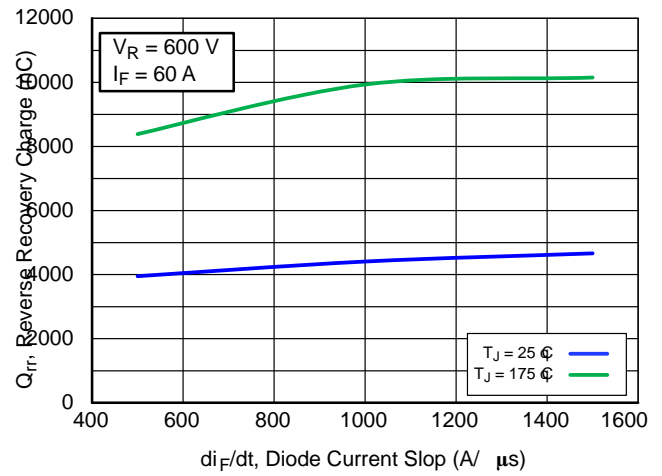


Figure 20. Diode Stored Charge Characteristics

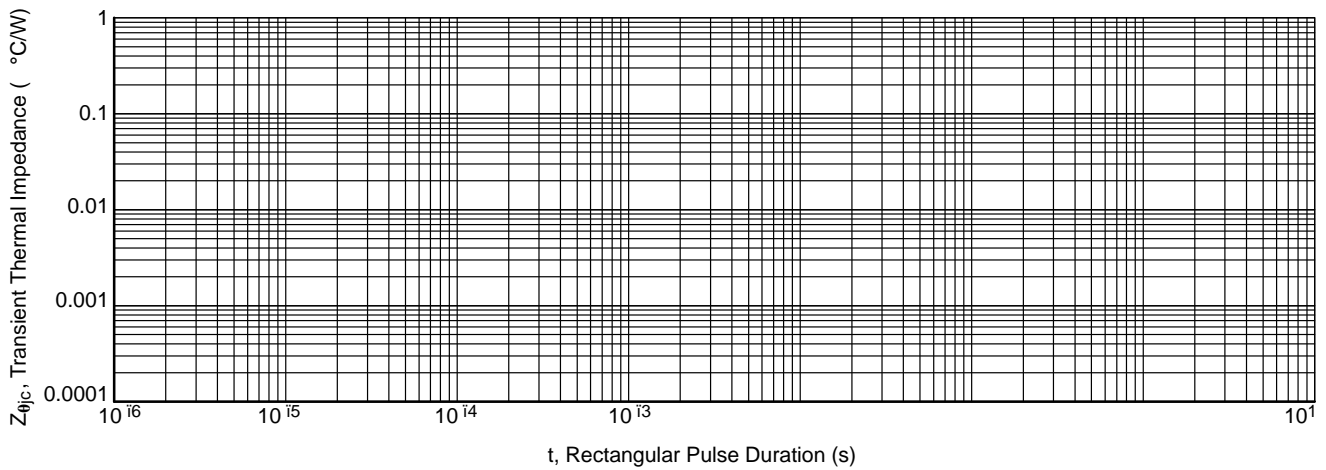


Figure 21. Transient Thermal Impedance of IGBT

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