

IGBT P, S, VII
N-Channel, Field Stop
(FS7), SCR, TO247-4L
1200 V, 1.66 V, 40 A

AFGH4L40T120RW-STD

Description

Using the novel field stop 7th generation IGBT technology in TO247 4 lead package, this device of

AFGH4L40T120RW-STD

THERMAL CHARACTERISTICS

Parameter	Symbol	Value
Thermal Resistance, Junction-to-Case for IGBT	$R_{\theta JC}$	0.36
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	40

ELECTRICAL CHARACTERISTICS ($T_J = 25\text{ C}$ 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	-	-	V
Zero Gate Voltage Collector Current	I_{CES}	$V_{GE} = 0\text{ V}, V_{CE} = V_{CES}$	-	-	40	μA
Gate-to-Emitter Leakage Current	I_{GES}	$V_{GE} = 20\text{ V}, V_{CE} = 0\text{ V}$	-			

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
SWITCHING CHARACTERISTICS (Note: Si Diode Applied)						
Turn-On Delay Time	$t_{d(on)}$	$V_{CE} = 600\text{ V}, V_{GE} = 15\text{ V},$ $I_C = 20\text{ A}, R_G = 6\ \Omega,$ $T_J = 175\text{ C}$	-	41.4	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	270	-	
Rise Time	t_r		-	25.5	-	
Fall Time	t_f		-	284	-	
Turn-On Switching Loss	E_{on}		-	1	-	mJ
Turn-Off Switching Loss	E_{off}		-	1.81	-	
Total Switching Loss	E_{ts}		-	2.81	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{CE} = 600\text{ V}, V_{GE} = 15\text{ V},$ $I_C = 40\text{ A}, R_G = 6\ \Omega,$ $T_J = 175\text{ C}$	-	46.4	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	211	-	
Rise Time	t_r		-	38	-	
Fall Time	t_f		-	168	-	
Turn-On Switching Loss	E_{on}		-	3.05	-	mJ
Turn-Off Switching Loss	E_{off}		-	2.15	-	
Total Switching Loss	E_{ts}		-	5.19	-	

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TYPICAL CHARACTERISTICS

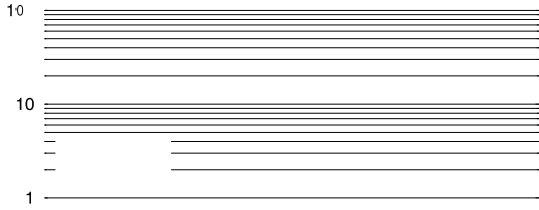
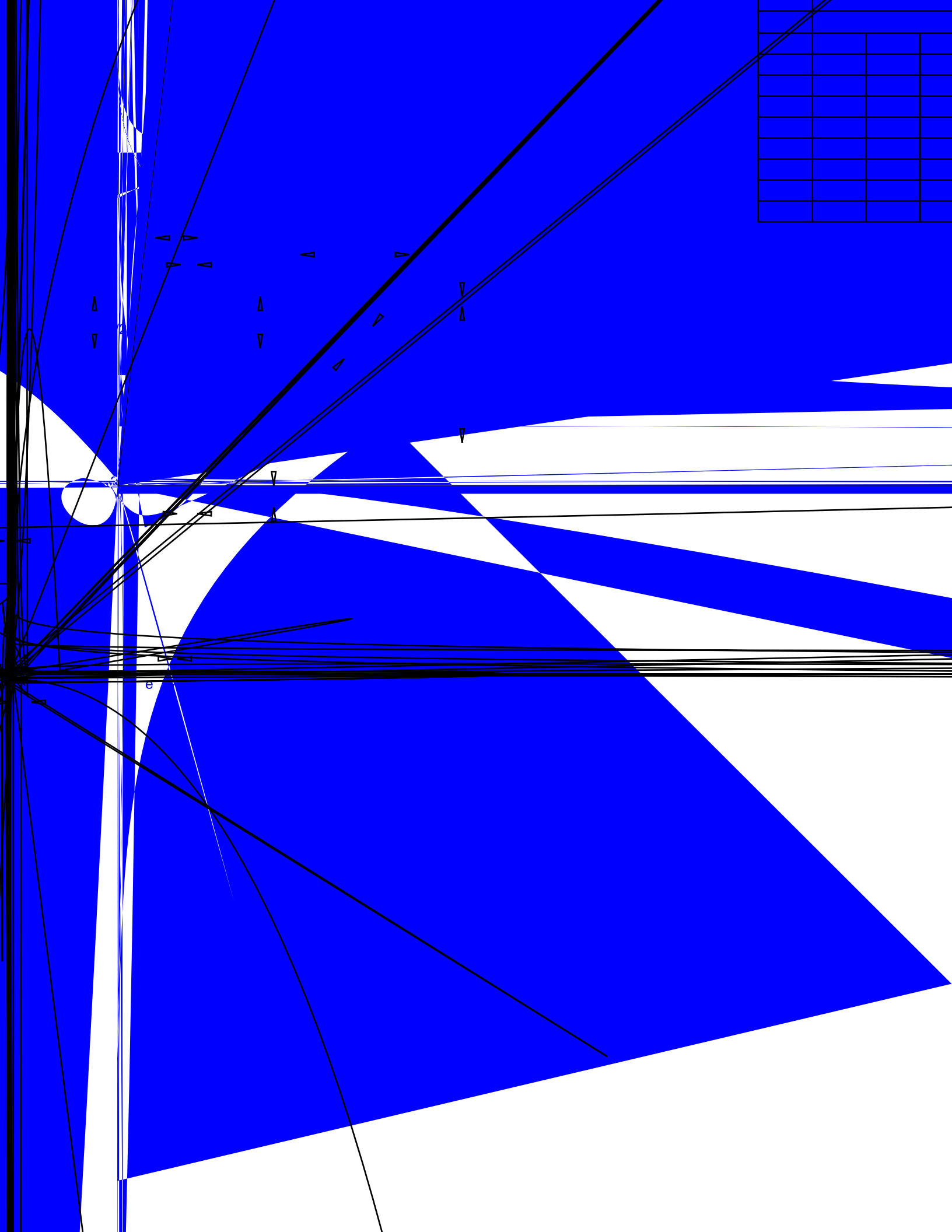


Figure 7. Capacitance Characteristics

Figure 8. Gate Charge Characteristics



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