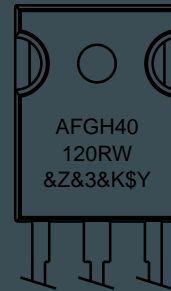
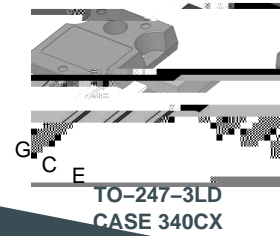
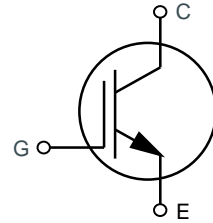


$V_{CE(sat)}$	I_C MAX
1200 V	40 A

PIN CONNECTIONS



AFGH40120RW = Specific Device Code
 &Z = Assembly Plant Code
 &3 = 3-Digit Date Code
 &K = 2-Digit Lot Traceability Code
 \$Y = onsemi Logo

Extremely
 Maximum Junction
 Short Circuit Rating
 Fast Switching /
 AEC-Q101 Qualifi
 This Device Pb-
 Compliant

Applications

Automotive
 Automotive
 OBC

MAXIMUM RATINGS (T_J unless noted)

	Symbol	Value	
Collector-to-Emitter Voltage	V_{CE}	1200	
Gate-to-Emitter Voltage	V_{GE}	20	
Transient Gate-to-Emitter Voltage		30	
Collector Current (Continuous)	I_C	80	A
		40	
Power Dissipation (Continuous)	P_D	652	W
		326	
Pulsed Collector Current (Pulse Width Limited by SOA)	I_{CM}	120	A
Short Circuit Withstand Time ($V_{GE} = 15$ V, $V_{CE} = 1200$ V)	T_{SC}	6	μ s
Operating Junction Temperature Range	T_J, T_{stg}	-55 to +175	C
Lead Temperature (Soldering)	T_L	260	

Stresses exceeding Maximum Ratings table may damage the device. If any of the Maximum Ratings are exceeded, device functionality should not be assumed, damage to the device may occur and reliability may be affected.

1. Repetitive rating limited by max. junction temperature

Device	Package	Quantity
AFGHL40T120RW	TO-247-3L (Pb-Free)	30 Units / Tube

AFGHL40T120RW

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
SWITCHING CHARACTERISTICS, INDUCTIVE LOAD (Note: Si Diode Applied)						
Turn-On Delay Time	$t_{d(on)}$	$V_{CE} = 600\text{ V}$ $V_{GE} = 0/15\text{ V}$ $I_C = 20\text{ A}$ $R_G = 4.7\ \Omega$ $T_J = 175\text{ C}$	-	56	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	414	-	
Rise Time	t_r		-	41.7	-	
Fall Time	t_f		-	375	-	
Turn-On Switching Loss	E_{on}		-	2.13	-	mJ
Turn-Off Switching Loss	E_{off}		-	2.51	-	
Total Switching Loss	E_{ts}		-			

AFGHL40T120RW

TYPICAL CHARACTERISTICS

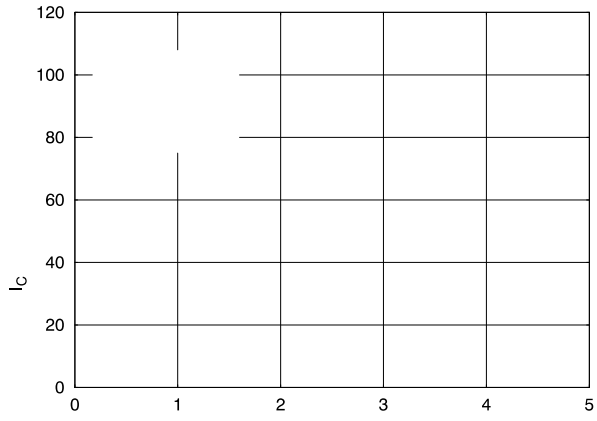


Figure 1. Output Characteristics

Figure 2. Output Characteristics

AFGHL40T120RW

TYPICAL CHARACTERISTICS

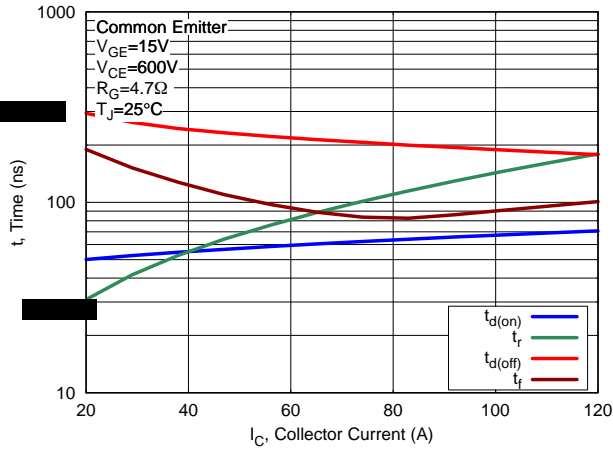


Figure 13. Switching Time vs Collector Current

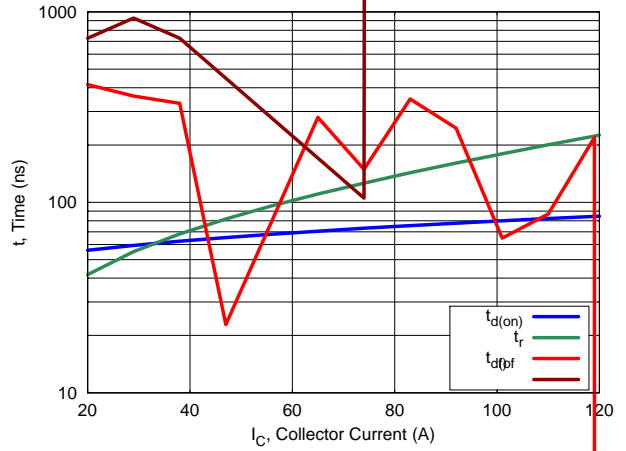


Figure 14. Switching Time vs Collector Current

Figure 54. Switching Loss vs Gate Resistance

100

GE

0^J

onsemi, **onsemi**, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi**
