



AFGY100T65SPD which is AEC Q101 qualified offers very low conduction and switch losses for a high efficiency operation in various applications, rugged transient reliability and low EMI.

Meanwhile, this part also offers an advantage of outstanding parallel operation performance with balance current sharing.

Features

- AEC-Q101 Qualified
- Very Low Saturation Voltage: $V_{CE(Sat)} = 1.6\text{ V (Typ.) @ } I_C = 100\text{ A}$
- Maximum Junction Temperature: $T_J = 175^\circ\text{C}$
- Positive Temperature Co-efficient for Easy Parallel Operating



	GES	± 20 ± 30	V
Collector Current (Note 1) @ $T_C = 25^\circ\text{C}$ @ $T_C = 100^\circ\text{C}$	I_C	120 100	A
Pulsed Collector Current	I_{LM}	300	A
Pulsed Collector Current	I_{CM}	300	A
Diode Forward Current (Note 1) @ $T_C = 25^\circ\text{C}$ @ $T_C = 100^\circ\text{C}$	I_F	120 100	A
Maximum Power Dissipation @ $T_C = 25^\circ\text{C}$ @ $T_C = 100^\circ\text{C}$	P_D	660 330	W
Short Circuit Withstand Time @ $T_C = 25^\circ\text{C}$	SCWT	6	μs
Voltage Transient Ruggedness (Note 2)	dV/dt	10	V/ns
Operating Junction / Storage Temperature Range	T_J, T_{STG}	-	

AFGY100T65SPD

THERMAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Thermal resistance junction-to-case, for IGBT	$R_{\theta JC}$	0.23	°C/W
Thermal resistance junction-to-case, for Diode	$R_{\theta JC}$	0.40	
Thermal resistance junction-to-ambient	$R_{\theta JA}$	40	

ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ$)

AFGY100T65SPD

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

AFGY100T65SPD

TYPICAL CHARACTERISTICS

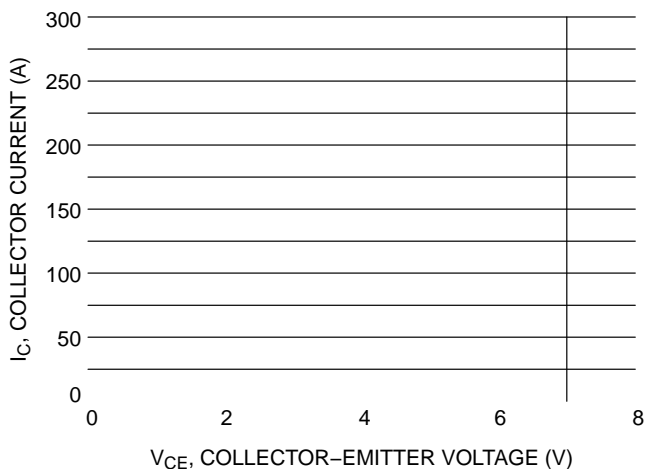


Figure 1. Typical Output Characteristics

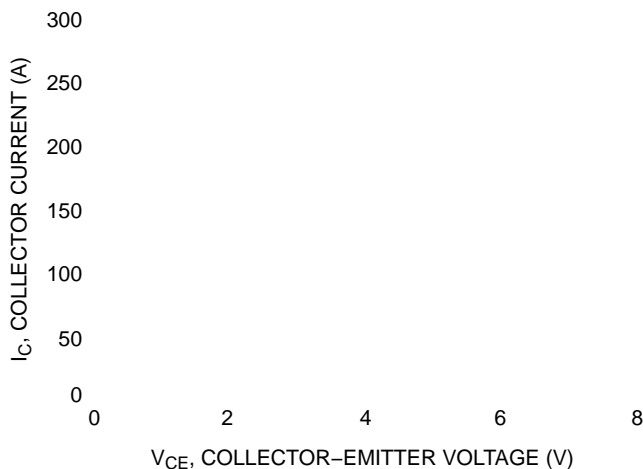


Figure 2. Typical Output Characteristics

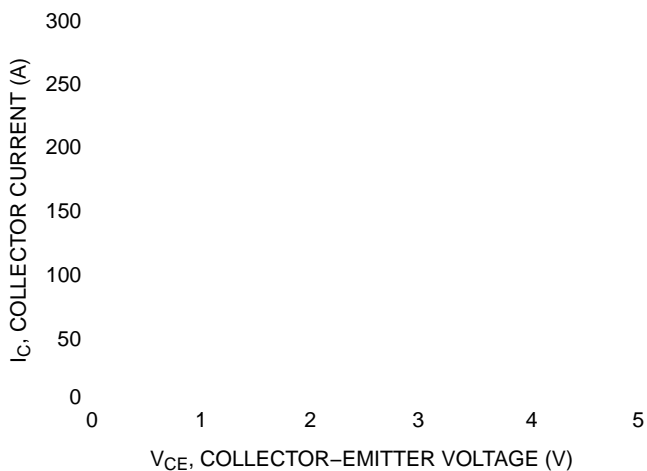


Figure 3. Typical Saturation Voltage

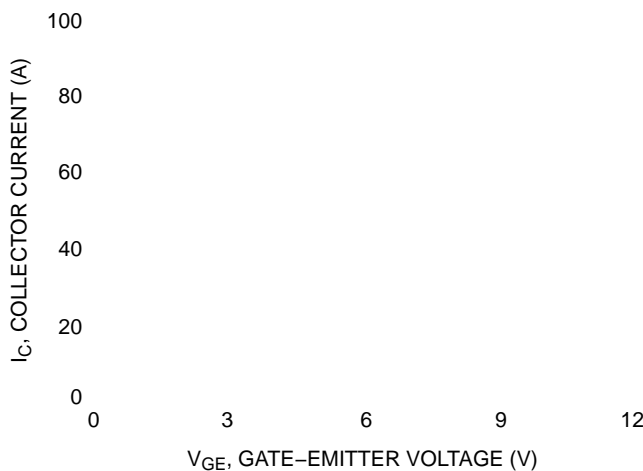


Figure 4. Transfer Characteristics

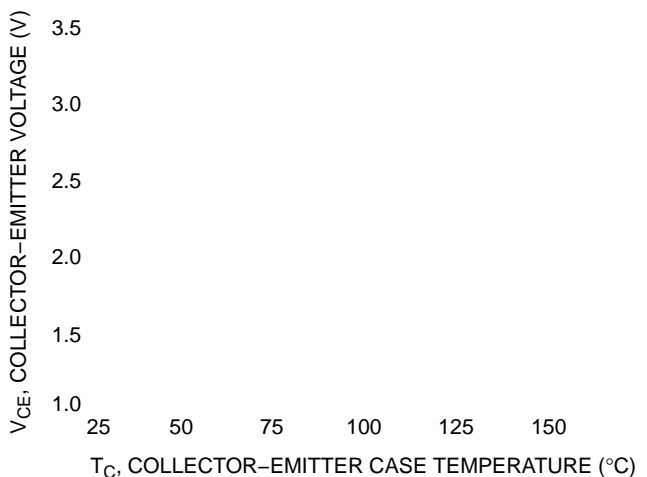


Figure 5. Saturation Voltage vs. Case Temperature

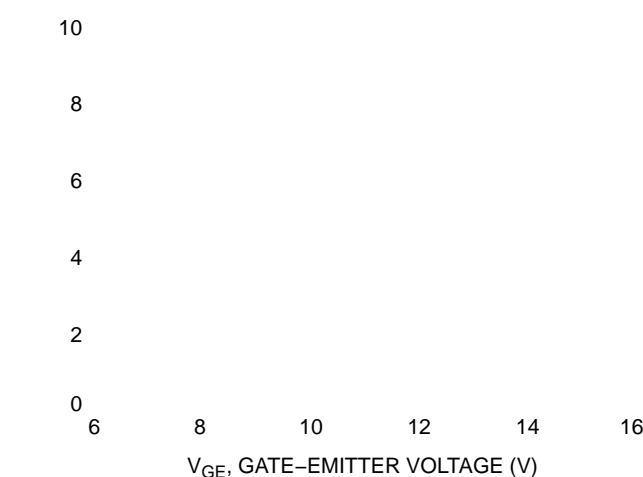


Figure 6. Saturation Voltage vs. V_{GE}

AFGY100T65SPD

AFGY100T65SPD

TYPICAL CHARACTERISTICS

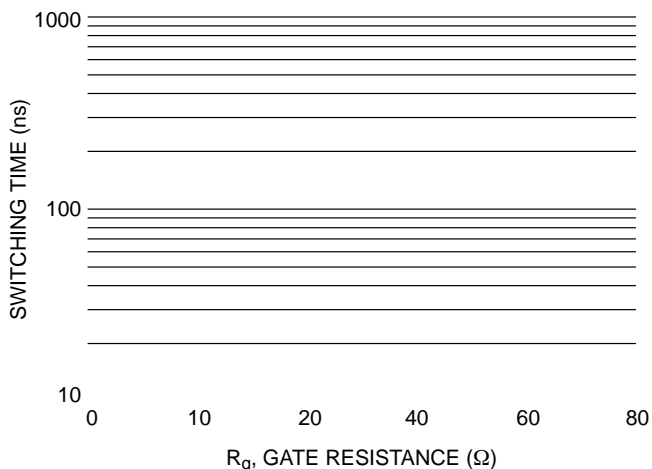


Figure 13. Turn-Off Characteristics vs. Gate Resistance

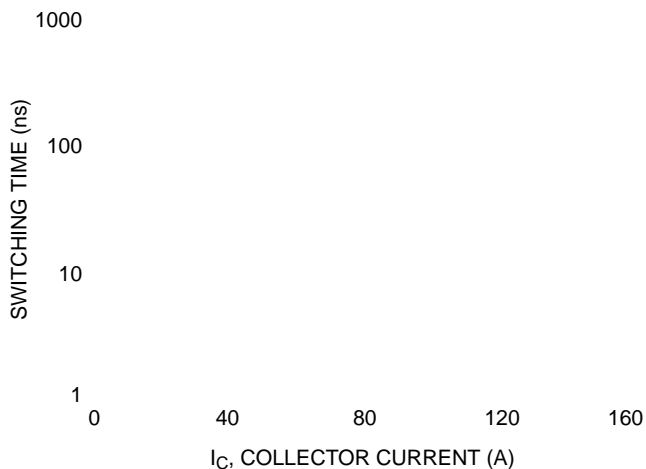


Figure 14. Turn-On Characteristics vs. Collector Current

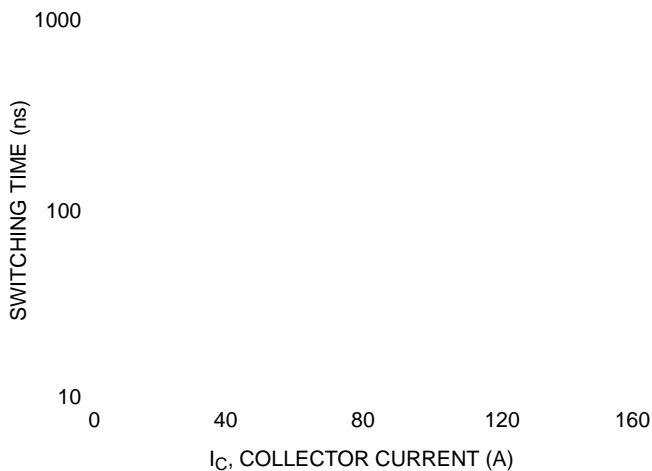


Figure 15. Turn-Off Characteristics vs. Collector Current

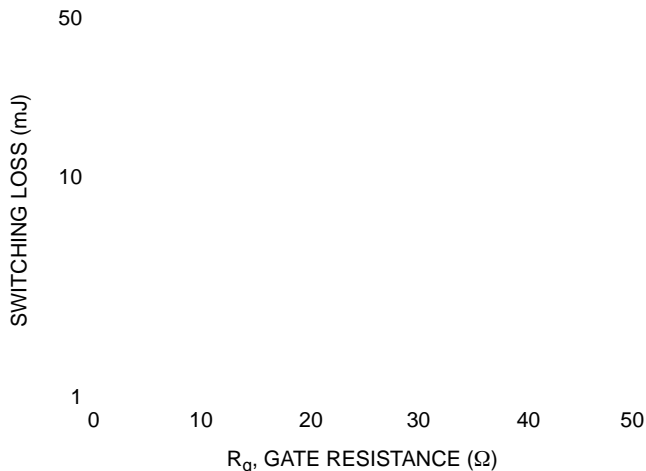


Figure 16. Switching Loss vs. Gate Resistance

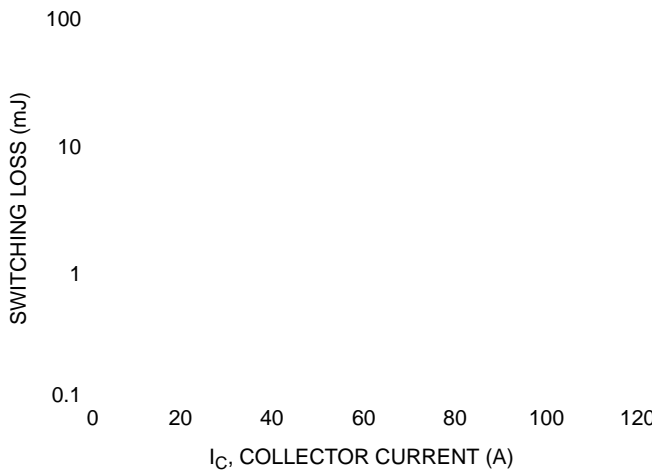


Figure 17. Switching Loss vs. Collector Current

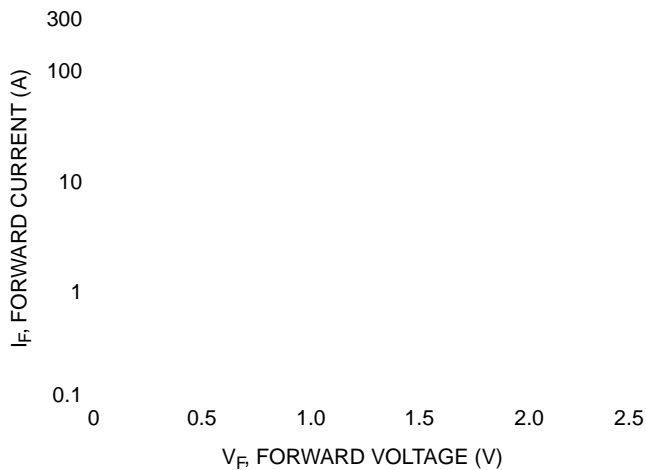


Figure 18. Forward Characteristics

AFGY100T65SPD

TYPICAL CHARACTERISTICS

V_R , REVERSE VOLTAGE (V)

Figure 19. Reverse Current

V_F

Figure 20. Stored Charge

AFGY100T65SPD

TYPICAL CHARACTERISTICS

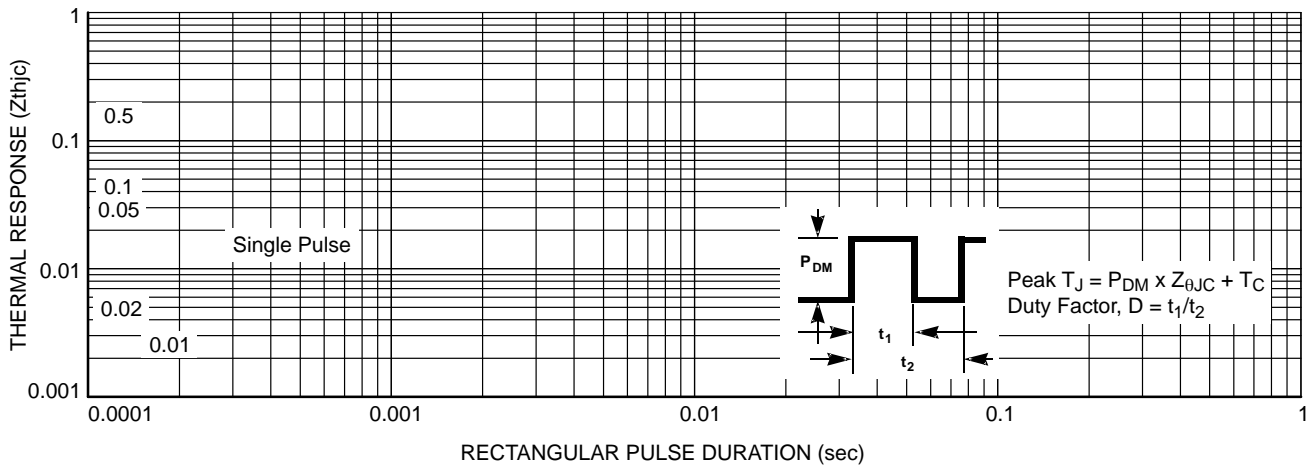


Figure 23. Transient Thermal Impedance of IGBT

DOCUMENT NUMBER: 98AON13773G

DESCRIPTION:

A

E

A

2

E2

D

A1

L1

L

b2

1

3

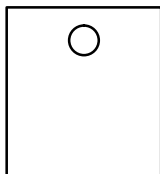
b4

b

e 2x

C

**GENERIC
MARKING DIAGRAM***



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**
