IGBT f A m i e A lica i n

1200 V, 25 A

AFGHL25T120RLD

www.onsemi.com

V_{CES}	I_C	$V_{CE(Sat)}$
1200 V	25 A	1.73 V (Typ.)

Description

This Insulated Gate Bipolar Transistor (IGBT) features a robust and cost effective Field Stop II Trench construction. Provides superior performance in demanding switching applications, offering both low on state voltage and minimal switching loss, which is AEC Q101 qualified offer the optimum performance for both hard and soft switching topology in automotive application.

Features

- Extremely Efficient Trench with Field Stop Technology
- Maximum Junction Temperature: T_J = 175°C
- Short Circuit Withstand Time 9 μs
- 100% of the Parts Tested for I_{LM} (Note 2)
- Fast Switching
- Tighten Parameter Distribution
- AEC−Q101 Qualified and PPAP Capable
- This Device is Pb−Free, Halogen Free/BFR Free and is RoHS Compliant

Typical Applications

- Automotive HEV−EV E−Compressor
- Automotive HEV−EV PTC Heater
- Automotive HEV−EV PTC Onboard Chargers
- Automotive HEV−EV DC−DC Converters

TO−247 Ï ï

MARKING DIAGRAM

AFG25T
120RLD
$Y&Z&3&K

AFG25T120RLD	= Specific Device Code
$Y	= ON Semiconductor Logo
&Z	= Assembly Plant Code
&3	= 3−Digit Data Code
&K	= 2−Digit Lot Traceability Code

ORDERING INFORMATION

ABSOLUTE MAXIMUM RATINGS

Description	Symbol

ELECTRICAL CHARACTERISTICS (T_J = 25°C unless otherwise specified) (continued)

Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
DYNAMIC CHARACTERISTICS						
Input Capacitance	V_{CE} = 30 V, V_{GE} = 0 V, f = 1 MHz	C_{ies}	–	6174	–	pF
Output Capacitance		C_{oes}	–	212	–	
Reverse Transfer Capacitance		C_{res}	–	114	–	
SWITCHING CHARACTERISTICS, INDUCTIVE LOAD						
Turn−on Delay Time	T_C = 25°C V_{CC} = 600 V, I_C = 12.5 A Rg = 5 Ω V_{GE} = 15 V Inductive Load	$t_{d(on)}$	–	25.6	–	ns
Rise Time		t_r	–	9.6	–	
Turn−off Delay Time		$t_{d(off)}$	–	126.0	–	
Fall Time		t_f	–	86.0		

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TYPICAL CHARACTERISTICS (continued)

Figure 7. Capacitance Characteristics

Figure 8. Gate Charge Characteristics

Figure 9. Turn−on Characteristics vs. Gate Resistance

Figure 10. Turn−off Characteristics vs. Gate Resistance

Figure 11. Turn−on Characteristics vs. Collector Current

Figure 12. Turn−off Characteristics vs. Collector Current

TYPICAL CHARACTERISTICS

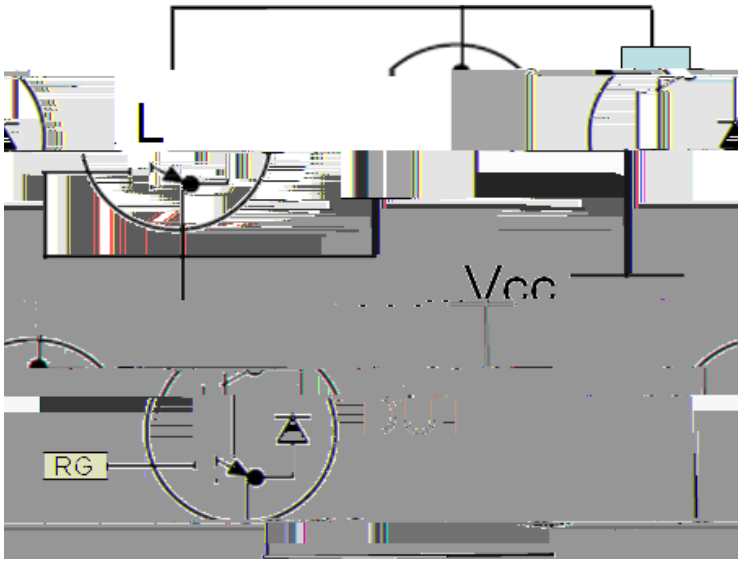


Figure 21. Test Circuit for Switching Characteristics

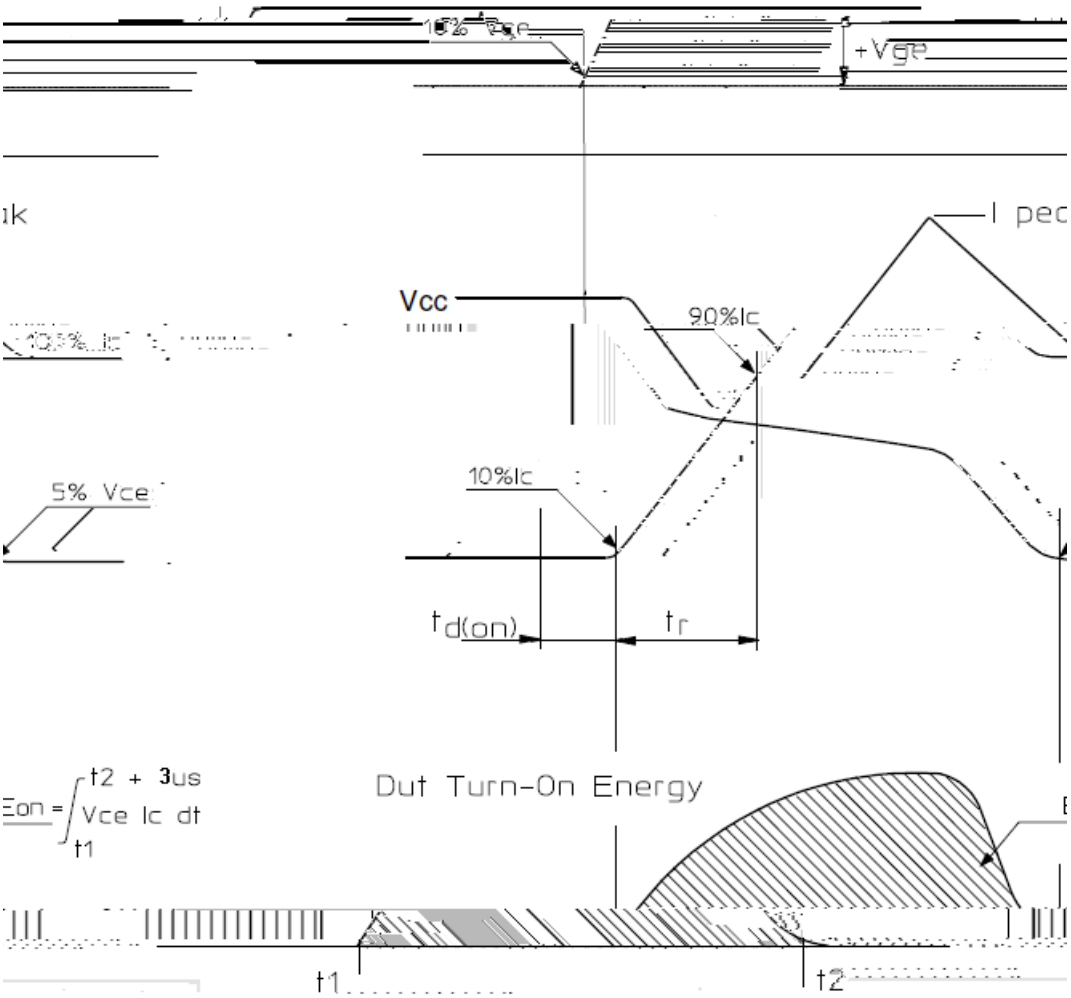


Figure 22. Definition of Turn On Waveform

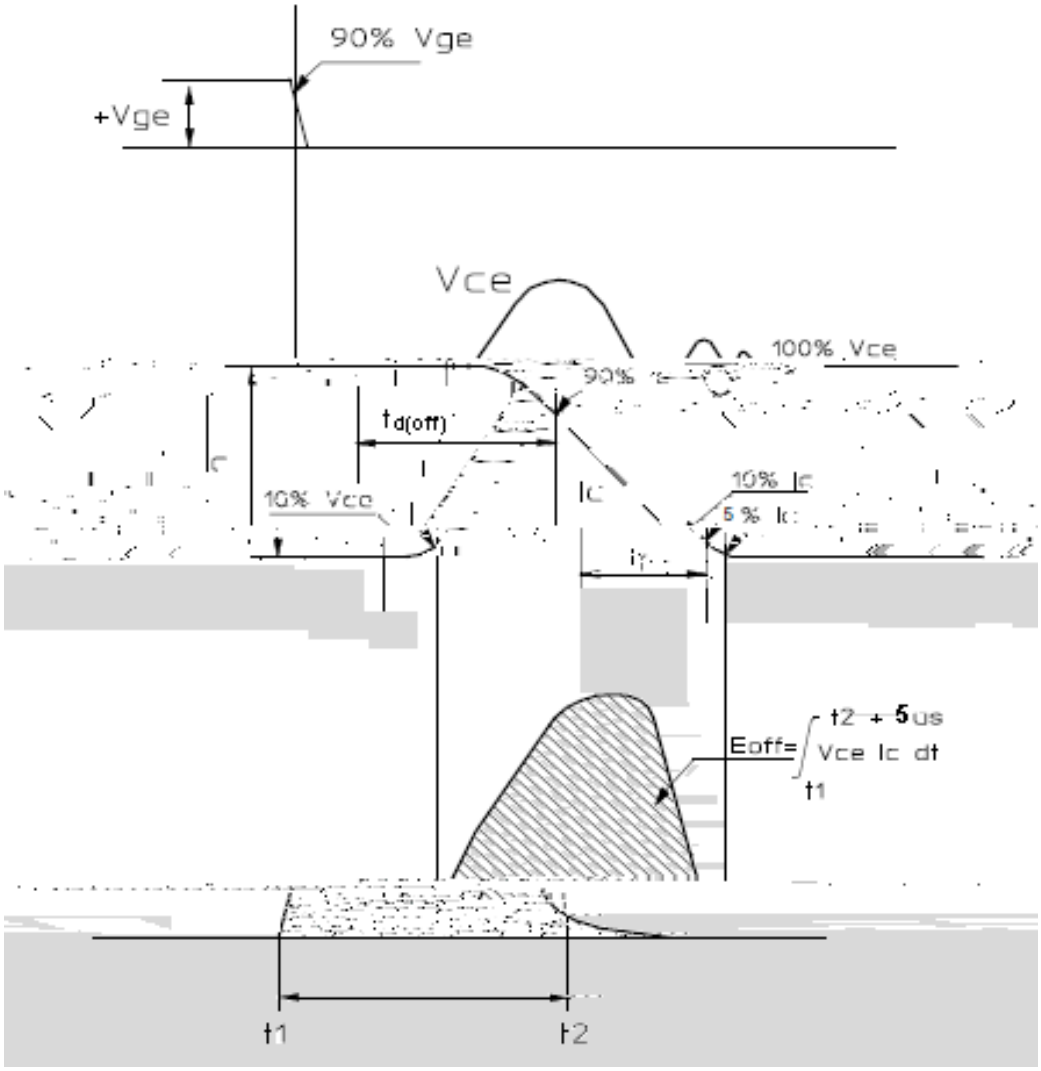
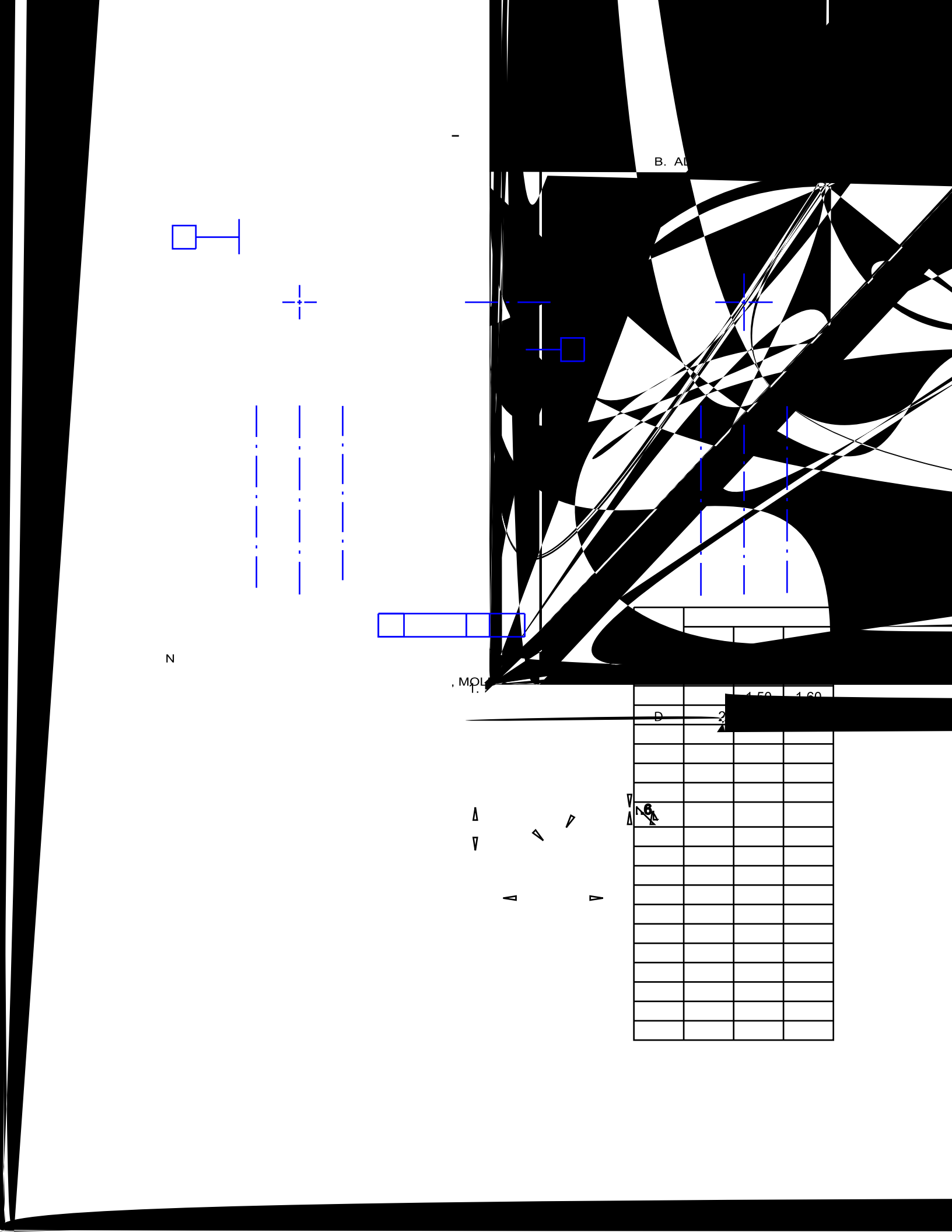


Figure 23. Definition of Turn Off Waveform


B. Al
N
1.50
1.60
D
3
6