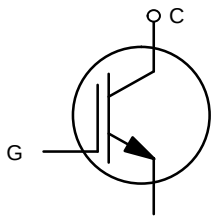
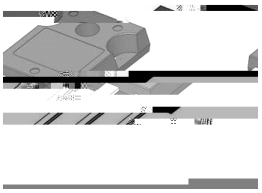
B A , d , - , (7), , 247-3

1200 1.67 40 A

A 40 120 -

BV_{CES}	$V_{CE(sat)}$ TYP	I_C
1200 V	1.67 V	





TO−247−3LD
CASE 340CX

Description

Using the novel field stop 7th generation IGBT technology in TO247 3ǐlead package, this device offers good performance with low on state voltage and low switching losses for both hard and soft switching topologies in automotive applications.

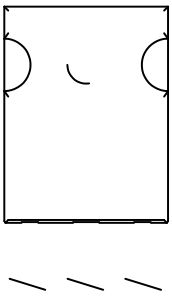
Features

- Extremely Efficient Trench with Field Stop Technology
- Maximum Junction Temperature ǐ T_J =175 C
- Short Circuit Rated and Low Saturation Voltage
- Fast Switching and Tightened Parameter Distribution
- AECǐQ101 Qualified, PPAP Available Upon Request
- This Device is Pbǐ Free, Halogen Free/BFR Free and is RoHS Compliant

Applications

Automotive Eǐ compressor / Automotive EV PTC Heater / OBC

MARKING DIAGRAM



MAXIMUM RATINGS (T_J = 25 C unless otherwise noted)

Parameter		Symbol	Value	Unit
Collector−to−Emitter Voltage		V_{CE}	1200	V
Gate−to−Emitter Voltage		V_{GE}	20	
Transient Gate−to−Emitter Voltage			30	
Collector Current	T_C = 25 C	I_C	80	A
	T_C = 100 C		40	
Power Dissipation	T_C = 25 C	P_D	468	W
	T_C = 100 C		234	
Pulsed Collector Current	T_C = 25 C, tp = 10 µs (Note 1)	I_{CM}	160	A

1. Repetitive rating: Pulse width limited by max. junction temperature

ORDERING INFORMATION

Device	Package	Shipping

ELECTRICAL CHARACTERISTICS (T_J = 25 C unless otherwise specified)

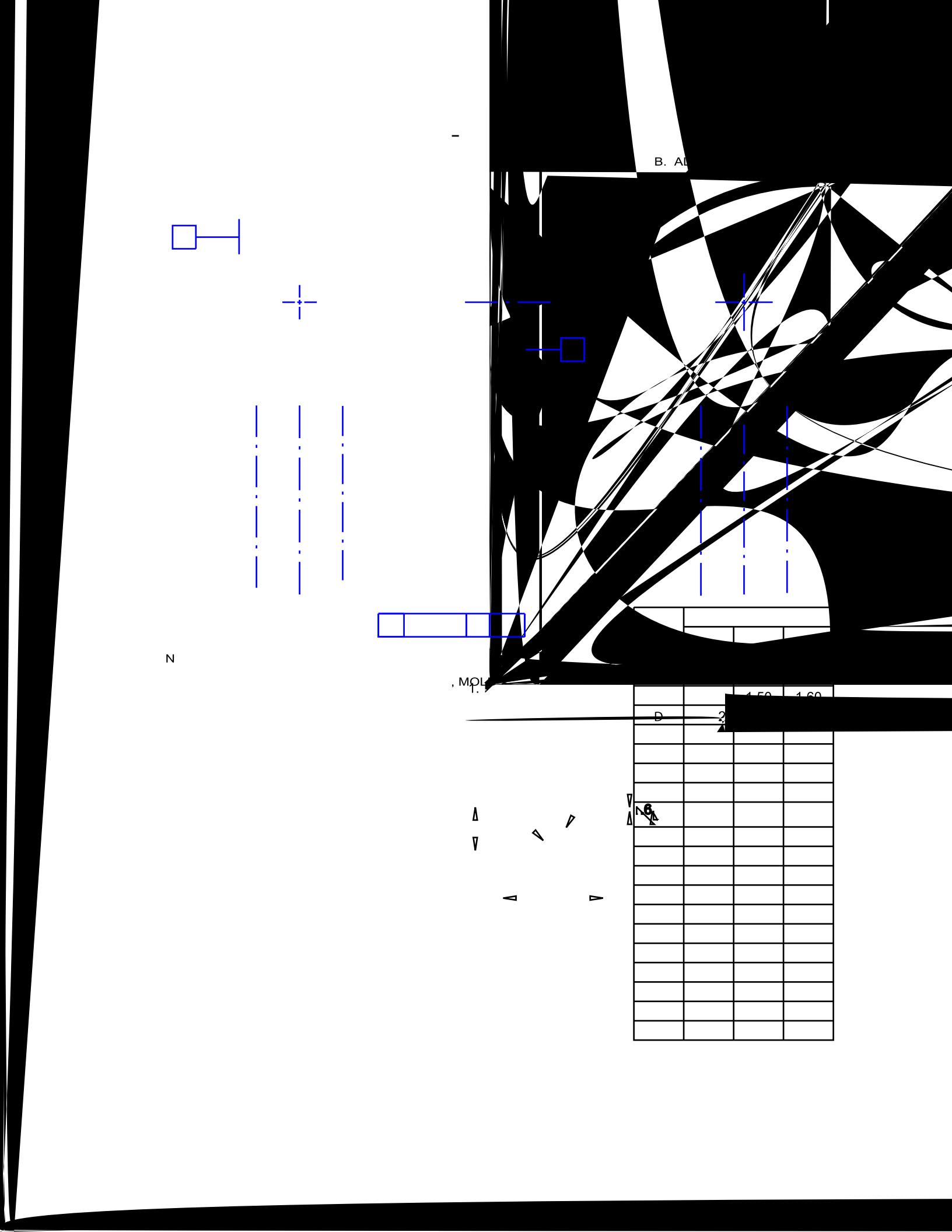
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
SWITCHING CHARACTERISTICS (Note: Si Diode Applied)						
Turn−On Delay Time	$t_{d(on)}$	V_{CE} = 600 V, V_{GE} = 15 V, I_C = 20 A, R_G = 4.7 Ω, T_J = 175 C	−	40.5	−	ns
Turn−Off Delay Time	$t_{d(off)}$		−	256	−	
Rise Time	t_r		−	38.8	−	
Fall Time	t_f		−	282	−	
Turn−On Switching Loss	E_{on}		−	1.58	−	mJ
Turn−Off Switching Loss	E_{off}		−	1.8	−	
Total Switching Loss	E_{ts}		−	3.38	−	
Turn−On Delay Time	$t_{d(on)}$	V_{CE} = 600 V, V_{GE} = 15 V, I_C = 40 A, R_G = 4.7 Ω, T_J = 175 C	−	46.8	−	ns
Turn−Off Delay Time	$t_{d(off)}$		−	199	−	
Rise Time	t_r		−	70.7	−	
Fall Time	t_f		−	167	−	
Turn−On Switching Loss	E_{on}		−	4.74	−	mJ
Turn−Off Switching Loss	E_{off}		−	2.19	−	
Total Switching Loss	E_{ts}		−	6.93	−	

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

TYPICAL CHARACTERISTICS

Figure 7. Capacitance Characteristics

Figure 8. Gate Charge Characteristics


B. Al
N
1.50
1.60
D
3
6