

# SMD Transformer / Automotive grade CEER117



## Feature

- High isolation transformer for IGBT gate drive
- Low profile / Small floor space
- High power density / High withstand voltage
- Multiple cores available



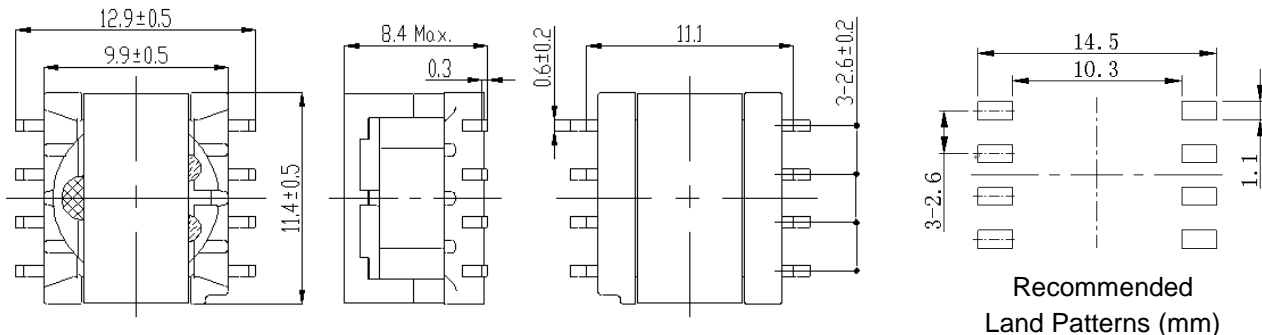
## Application

- Main inverter for IPM motor in xEV/EV (Distributed type)
- Power supply for battery management system
- AUX power supply for MOSFET driver
- Commercial / Industrial and Medical equipment

*Custom design Available*

## Dimensions (mm)

- Size (L x W x H): 13.4mm x 11.9mm x 8.4mm (Max)
- Number of terminals: 4/4 (Primary/Secondary)



## Electrical characteristic (In general)

- Topology: Flyback converter
- Max. Operating frequency 500 kHz
- Operating Power 2.0W (@ 100 kHz)
- Withstand Voltage: 2.5kVrms/1min
- Operating temperature range : - 40°C ~ + 125°C (\*\*Including coil's self-temperature rise)

## Reliability

- Comply with AEC-Q200
- RoHS 2 Compliance

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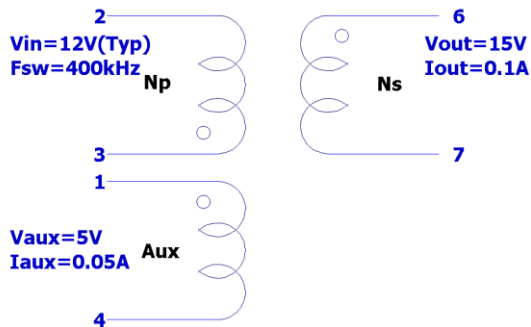


## [IC reference 1]

### Power supply for IGBT gate driver / Flyback transformer

- IC manufacture : ROHM
- IC part number
  - ✓ BM60051FV
  - ✓ BM60052AFV
  - ✓ BM60054AFV
  - ✓ BM60055FV
  - ✓ BM60056FV
- Sumida part number : CEER117-AX05-15-007

### Schematic of transformer winding



### ELECTRICAL CHARACTERISTICS(at 25°C)

ITEM	PIN	SPECIFICATION	MEASURING CONDITIONS
INDUCTANCE	(2-3)	7.2 $\mu$ H $\pm$ 18% within	100kHz/1V
INDUCTANCE	(1-4)	13.8 $\mu$ H(Ref)	100kHz/1V
INDUCTANCE	(6-7)	120 $\mu$ H(Ref)	100kHz/1V
LEAKAGE INDUCTANCE	(2-3)	0.1 $\mu$ H(Ref)	100kHz/1V (Pin#1,4,6,7 Short)
Withstand voltage	(1,2,3,4)-(6,7)	AC2500V/1min	1mA, 50/60Hz

\* OPERATING TEMPERATURE RANGE: -40°C~125°C . (INCLUDING TEMPERATURE RISE).

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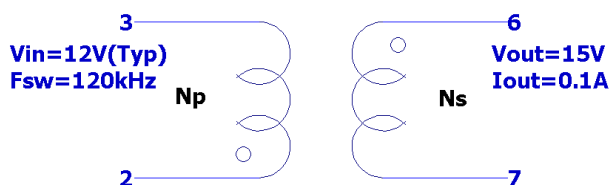


## [IC reference 2]

### Power supply for IGBT gate driver / Flyback transformer

- IC manufacture : Broadcom
- IC part number
  - ✓ ACPL-32JT
- Sumida part number : CEER117-AX05-13-048

### Schematic of transformer winding



### ELECTRICAL CHARACTERISTICS(at 25°C)

ITEM	PIN	SPECIFICATION	MEASURING CONDITIONS
INDUCTANCE	(2-3)	59.0 $\mu$ H $\pm$ 22% within	100kHz/1V
INDUCTANCE	(6-7)	240 $\mu$ H $\pm$ 22% within	100kHz/1V
LEAKAGE INDUCTANCE	(2-3)	1.8 $\mu$ H(Max)	100kHz/1V (Pin#6,7 Short)
Withstand voltage	(2,3)-(6,7)	AC2500V/1min	1mA, 50/60Hz
Saturation current	(2-3)	1.1A	At 125°C
Temperature rise current	(2-3)	0.9A	

- \* OPERATING TEMPERATURE RANGE: -40°C~125°C . (INCLUDING TEMPERATURE RISE).
- \* Saturation current: This indicates the value of D.C current when the inductance becomes 10% lower than its initial value.
- \* Temperature rise current: The value of D.C. current when the temperature of coil becomes  $\Delta T=30^{\circ}$ C.

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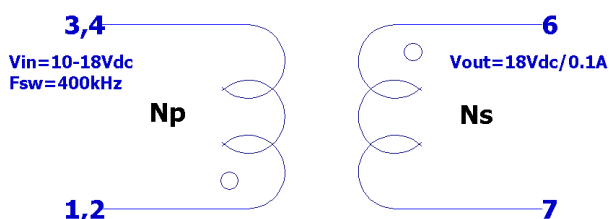


## 【IC Reference 3】

### Power supply for SIC gate driver / Flyback transformer

- IC manufacture : ROHM
- IC part number
  - ✓ BD7F100EFJ-LB / Mainly Industrial use
- Sumida part number
  - ✓ 15318-T131
  - ✓ 15318-T140
  - ✓ 15318-T148
  - ✓ 15318-T154

### Schematic of transformer winding (e.g:15318-T131)



### ELECTRICAL CHARACTERISTICS(at 25°C)

ITEM	PIN	SPECIFICATION	MEASURING CONDITIONS
INDUCTANCE	(1,2-3,4)	23.0μH±25% within	100kHz/1V
INDUCTANCE	(6-7)	155μH(Ref)	100kHz/1V
LEAKAGE INDUCTANCE	(1,2-3,4)	0.16uH(Ref)	100kHz/1V (Pin#6,7 Short)
DCR	(1,2-3,4)	125m Ω ±25% within	
DCR	(6-7)	640m Ω (Ref)	
Withstand voltage	(2,3)-(6,7)	AC2500V/1min	1mA, 50/60Hz

\* OPERATING TEMPERATURE RANGE: -40°C~125°C . (INCLUDING TEMPERATURE RISE).



For sales office information, please [click here](#) to visit our website.

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