

GT06 Series

AEC-Q200 Qualified SMT Gate Drive Transformers



- ET products: Up to 142 V- μ s
- Isolation voltage: 4000 V_{AC}
- Creepage/Clearance: 12.5 mm
- Frequency range: 40 kHz to 350 kHz
- Meets AEC-Q200 qualification standards
- New models meet updated IEC standards (GT06-U)



APPLICATIONS

- Isolated gate drivers
- Automotive systems
- Battery management systems
- Renewable energy systems
- Motor drivers and inverters
- Feedback & signal isolation

ELECTRICAL SPECIFICATIONS @ 25°C

Part Number	Turns Ratio (TR)	Drive Inductance ¹ (μ H, Min)	DCR (Drive : Gate1 : Gate2) (Ω , Max)	Leakage Ind (Drive) ¹ (μ H, Max)	ET Product ² (V- μ s, Max)	SRF ³ (1-6) (MHz, Typ)	C _{ww1} / C _{ww2} ⁴ (pF, Typ)
GT06-111-049	1 : 1 : 1	882	0.720 : 0.720 : 0.720	0.36	49	2.2	11.77 / 12.10
GT06-111-100	1 : 1 : 1	2000	1.430 : 1.300 : 1.300	0.47	100	1.3	16.84 / 16.73
GT06-122-053	1 : 1 : 1	162	0.360 : 0.720 : 0.720	0.24	53	4.2	5.15 / 5.19
GT06-111-037-U	1 : 1 : 1	420	0.750 : 0.320 : 0.320	0.90	37	4.36	8.5 / 8.6
GT06-111-049-U	1 : 1 : 1	700	0.970 : 0.440 : 0.440	1.30	49	3.44	11.7 / 11.9
GT06-111-069-U	1 : 1 : 1	1450	1.300 : 0.630 : 0.630	1.40	69	1.26	16.9 / 17.2
GT06-1X1-039-U	1 : 1.1 : 1.1	380	0.730 : 0.330 : 0.330	1.00	39	4.62	8.4 / 8.3
GT06-1X1-051-U	1 : 1.1 : 1.1	650	0.910 : 0.470 : 0.470	1.00	51	3.37	11.4 / 11.6
GT06-1X1-069-U	1 : 1.1 : 1.1	1150	1.180 : 0.640 : 0.640	1.30	69	1.28	15.2 / 15.2
GT06-122-044-U	1 : 2.5 : 2.5	95	0.450 : 0.390 : 0.390	0.40	44	4.40	5.5 / 5.4
GT06-122-053-U	1 : 2.5 : 2.5	140	0.500 : 0.450 : 0.450	0.40	53	3.50	6.8 / 6.9
GT06-122-071-U	1 : 2.5 : 2.5	245	0.610 : 0.610 : 0.610	0.50	71	1.55	9.3 / 9.4
Part Number (Center-Tapped)			(Drive : Gate) (Ω , Max)			(2-4) (MHz, Typ)	C _{ww} (pF, Typ)
GT06-110-039-U	1 : 1	470	0.880 : 0.340	1.30	39	4.23	7.8
GT06-110-053-U	1 : 1	850	1.130 : 0.460	1.30	53	2.83	11.3
GT06-110-071-U	1 : 1	1550	1.400 : 0.640	2.40	71	1.75	17.2
GT06-1X0-039-U	1 : 1.1	390	0.800 : 0.340	1.30	39	4.11	7.5
GT06-1X0-078-U	1 : 1.1	1550	1.350 : 0.710	2.00	78	1.54	17.3
GT06-120-106-U	1 : 2.5	550	0.930 : 0.930	1.20	106	1.01	13.3
GT06-120-142-U	1 : 2.5	1000	1.170 : 1.250	1.30	142	0.50	18.1

GENERAL DATA

Operating Temperature ⁵	-40°C to +130°C	Isolation Voltage (Drive-Gates) ⁷ (GT06-U)	4000 V _{AC}
Storage Temperature ⁶	-20°C to +60°C	Isolation Voltage (Gate1-Gate2) ⁷ (GT06-U)	1800 V _{AC}
Frequency Range	40 kHz to 350 kHz	Isolation Voltage (Drive-Gates) ⁷ (GT06)	3750 V _{AC}
		Isolation Voltage (Gate1-Gate2) ⁷ (GT06)	1500 V _{DC}

Specifications subject to change without prior notice.

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- Drive and Leakage Inductances:** Tested at 100kHz, 0.1 V_{RMS}
- ET Product:** The maximum ET is based upon a flux density of 2500 Gauss for GT06-U (or 3300 Gauss for GT06) at 25°C.
 $ET = E_p/2f$,
 where, E_p = Drive Voltage (V), f = Frequency (Hz)
- SRF** values are for reference only.
- Interwinding Capacitances:** Drive to Gate1/ Drive to Gate2
- Operating Temp. Range:** The combination of ambient temperature and temperature rise.
- Storage Temp.:** Applies to parts removed from original packaging.
- Hi-Pot Rating:** Tested @ 60Hz, 1mA.
- Suitable for **bipolar** applications only.

MECHANICAL DRAWING	RECOMMENDED PCB LAYOUT
<p style="text-align: center;"><i>Note: All dimensions are in mm</i></p>	
	SCHEMATIC

COMPLIANCE			
Creepage Distance	12.5 mm	Insulation System	SBI5.1(Class F)
Clearance Distance	12.5 mm	Environmental & Safety	REACH, RoHS
Material Group	CTI IIIa (175V ≤ CTI < 400V)	Flammability Rating	UL-94 V-0
Standard		Condition	
Designed to comply with	IEC 61558-1	For a working voltage up to 1000 V_{RMS} for Basic Insulation and 625 V_{RMS} for Reinforced Insulation ; with Creepage & Clearance of 12.5 mm, Overvoltage Category II, Pollution Degree 2, and Material Group IIIa.	
	IEC 62368-1	For a working voltage up to 1250 V_{RMS} (1.97 kV_{PEAK}) for Basic Insulation and 625 V_{RMS} (1.69 kV_{PEAK}) for Reinforced Insulation ; with Creepage & Clearance of 12.5 mm, Overvoltage Category II, Pollution Degree 2, and Material Group IIIa.	

Note: For working voltages over 750 V peak, partial discharge testing may be required.

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RELIABILITY TESTING

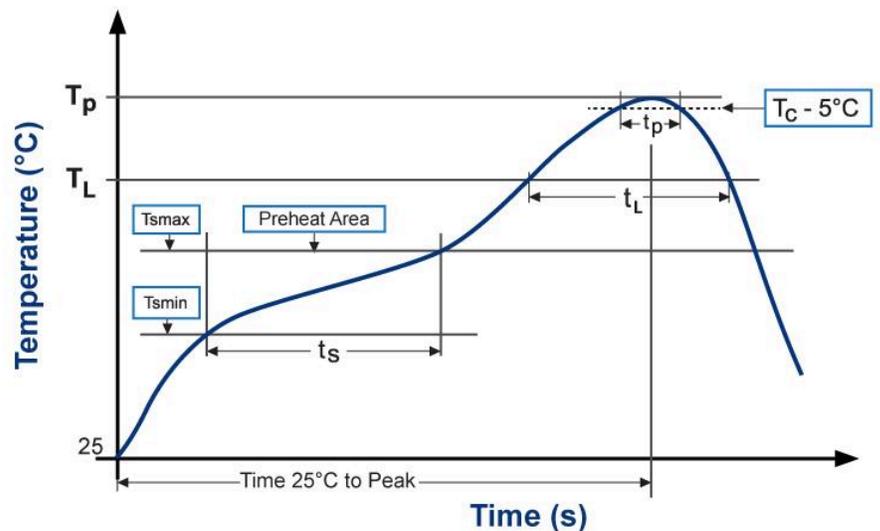
[AEC-Q200 Qualification](#) and [ICE Reliability Testing](#):

High Temperature Exposure (Storage), Temperature Cycling, High Temp Operational Life, Humidity Bias, Mechanical Shock, Vibration, Resistance to Solvents, Resistance to Soldering Heat, Electrostatic Discharge, Terminal Strength, Board Flex and Solderability

Passed All Tests

REFLOW SOLDERING PROFILE (Lead-Free)

Preheat/Soak:	
Temperature Min (T_{SMIN})	150 °C
Temperature Max (T_{SMAX})	200 °C
Time (t_s) from T_{SMIN} to T_{SMAX}	60 - 120 sec
Ramp-Up Rate (T_L to T_P)	3 °C/sec max
Liquidous Temperature (T_L)	217 °C
Time (t_L) maintained above T_L	60 - 150 sec
Peak Package Body Temp (T_P)	245 °C
Time (t_p) within 5°C of the specified classification temperature (T_C)	< 30 sec
Ramp-Down Rate (T_P to T_L)	6 °C/sec max
Time 25°C to peak temperature	8 min max



PACKAGING

Reel Diameter	13 inches
Reel Width	32 mm
Pieces/Reel	400
Reel/Box	8
Pieces/Box	3200

COMPONENT LIBRARY

AutoCAD 3D Model	SPICE Parameters
LTSpice	PSPice
Altium	Cadence
EagleCAD	

PCB Washing

See [ICE Washability Information](#).

Application Note

See [Applying Gate Drive Transformers in Push-Pull Topology](#)

Series Page

See <https://www.icecomponents.com/product/gt06-series/>

For questions or additional information, [contact ICE Components](#).

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