1) The purpose of the specification is to document the Qualification Report for TPH3205WSBQA
2) Scope
   a) Product(s) in section 1 are fully qualified per AEC-Q101 and released to production
3) Qualification Process
   a) All Fab Lots were processed separately with a discrete amount of time between lots. All lots were assembled using the same Assembly House, on the same assembly line. All lots undergo Final Test using the documented test flow and are screened against documented test limits as appropriate to their part number. All processes and test conditions are documented and maintained under revision control as part of the Transphorm Quality Management System.
   b) Documented process and test conditions that are used for qualification of products are designated “Process of Record”. Changes to the Process of Record are managed through the Process/Product Change Notification Procedure, which is part of the Transphorm Quality Management System.
4) ESD Results: 3 parts pass for each test

Product Family	Machine Model	Human Body Model	Charged Device Model
TPH3205WSBQA	+/- 300V	+/- 1000V	+/- 1600V

5) Reliability Testing
   a) All electrical reliability tests were performed in accordance with the following document: “Failure Mechanism Based Stress Test Qualification for Discrete Semiconductors in Automotive Applications” AEC-Q101-Rev D1
   b) All tests were performed using TPH3205WSBQA
   c) Failed devices are analyzed for root cause and correction. Only a representative sample needs to be analyzed, though some level of analysis will be applied to every failed part. Acceptable root cause and corrective action and successful demonstration of corrective and preventative actions will constitute successful qualification of a device. The part and/or qualification family can be qualified as long as containment of any problems is demonstrated until corrective and/or preventative actions are in place

d) Test Conditions
   i) All devices must meet the following test conditions before and after reliability stress testing.
   ii) All devices must also meet the maximum allowed parameter shift conditions per section 2.5 of the Q101 specification as follows.
   iii) Percent Shift = (Post Stress Measurement – Pre Stress Measurement)/Pre-Stress Measurement

Parameter	Symbol	Conditions	LSL	USL	Unit	Max Shift	Comments
Drain to source leakage current	I_{DSS}	V_{DS}= 750V V_{GS} = 0V T_J=25ºC		40	µA	10X : moisture tests 5X: all other tests	Datasheet V_{DS} =650V
Gate to Source Forward Leakage Current	I_{GSS}	V_{GS}=18V		100	nA	Not required (per section 2.5.b) as leakage is < 100nA	Shift data is available
Drain source on resistance	R_{DS}	V_{GS}= 8V I_D=25A T_J= 25ºC		62	mΩ	Less than 20%	Datasheet I_D = 22mA
Gate Threshold Voltage	$V_{GS(th)}$	VGS=VGS ID=1mA	1.6	2.6	V	Less than 20%	Datasheet I_D = 0.7mA
Dynamic Ron	RonDyn	V_{DD} = 480V F=50Hz T_{pulse} = 2.5us $T_{measure}$=60sec		62	mΩ	Less than 20%	Test only HTRB

Note: In some cases test conditions are more stringent than datasheet conditions

Summary of Test Results

TEST	SYMBOL	CONDITIONS	SAMPLE	RESULT
High Temperature Reverse Bias	HTRB	TJ=150ºC V_{DS} = 650V 1000 HRS	3 lots – 77 parts per lot 231 total parts	0 Fails PASS
Parametric Verification	PV	-55ºC 25ºC 150ºC	3 lots- 25 parts per lot 75 total parts (min)	0 Fails PASS
Highly Accelerated Temp and Humidity Test	HAST	130ºC 85% RH 33.3 PSI Bias = 100V 288 HRS	3 lots 77 parts per lot 231 total parts	0 Fails PASS
Temperature Cycle	TC	-55ºC / 150ºC 2 Cycles / HR 1000 Cycles	3 lots 77 parts per lot 231 total parts	0 Fails PASS
Temperature Cycling Hot Test	TCHT	125ºC Test After TC	3 lots 77 parts per lot	0 Fails PASS
Wire Bond Integrity	WBI	150ºC, 500 hours	3 lots 5 parts per lot	0 Fails PASS
Power Cycle	PC	25ºC / 125ºC ΔT = 100ºC 15,000 Cycles	3 lots 77 parts per lot 231 total parts	0 Fails PASS
High Temperature Storage Life	HTSL	150ºC 1000 HRS	3 lots 77 parts per lot 231 total parts	0 Fails PASS
High Temperature Gate bias (Cascode)	HTGB	150ºC 1000 HRS V_{GSS}=18V	3 lots 77 parts per lot 231 total parts	0 Fails PASS
High Temperature Gate bias (HEMT ONLY)	HTGB#2	150ºC 1000 HRS V_{GSS}=-35V	3 lots 77 parts per lot 231 total parts	0 Fails PASS
High Humidity High Temp Reverse Bias	H3TRB	85ºC/85% RH 1000 HRS 100V	3 lots 77 parts per lot 231 total parts	0 Fails PASS
Unbiased Accelerated Stress Test	UHAST	130ºC 85% RH 96 HRS	3 lots 77 parts per lot 231 total parts	0 Fails PASS
Destructive Physical Analysis	DPA	Post TC & HAST	3 lots 2 Parts Per Lot	0 Fails PASS

Note: HAST test is 3X longer than required under Q101

Electrical Reliability Test Data Summary

HAST			Pre Stress		288 HOUR READPOINT					
		Sample	Mean	StdDev	Mean	Stdev	Max Shift	Min Shift	Max % Shift	Min % Shift
Lot01	Idss	77	2.38	0.16	2.33	0.16	0.03	-0.10	1.7%	-4.4%
	Igss	77	3.4E-05	1.9E-05	5.1E-03	7.5E-03	5.2E-02	7.2E-04		
	Rds(on)	77	39.6	1.5	37.9	1.9	0.8	-2.7	2.0%	-7.0%
	Vgs(th)	77	2.0	0.0	2.1	0.0	0.0	0.0	2.0%	1.5%
Lot02	Idss	77	2.39	0.12	2.36	0.13	0.23	-0.30	10.0%	-11.9%
	Igss	77	3.0E-05	2.6E-05	1.8E-03	2.4E-03	1.6E-02	3.8E-04		
	Rds(on)	77	39.7	1.3	38.1	1.8	0.2	-2.6	0.4%	-6.8%
	Vgs(th)	77	2.0	0.0	2.1	0.0	0.1	0.0	6.0%	0.0%
Lot03	Idss	77	2.29	0.13	2.28	0.14	0.08	-0.07	3.5%	-3.3%
	Igss	77	3.5E-05	1.1E-05	3.9E-03	4.0E-03	2.0E-02	5.2E-04		
	Rds(on)	77	40.7	1.6	39.2	2.1	2.0	-2.9	4.9%	-7.2%
	Vgs(th)	77	2.0	0.0	2.1	0.0	0.0	0.0	2.5%	0.9%

HTGB			Pre Stress		1000 HOUR READ POINT					
		Sample	Mean	StdDev	Mean	Stdev	Max Shift	Min Shift	Max % Shift	Min % Shift
Lot01	Idss	77	2.43	0.13	2.33	0.14	0.12	-0.26	5.1%	-10.8%
	Igss	77	3.5E-05	1.0E-05	6.1E-05	3.0E-05	1.5E-04	-1.7E-04		
	Rds(on)	77	39.1	1.1	39.0	1.7	5.7	-3.9	15.2%	-9.5%
	Vgs(th)	77	2.0	0.0	2.1	0.0	0.1	0.1	5.5%	3.9%
Lot02	Idss	77	2.30	0.17	2.23	0.19	0.43	-0.54	21.5%	-21.8%
	Igss	77	3.5E-05	4.6E-05	6.8E-05	3.8E-05	3.2E-04	-2.1E-04		
	Rds(on)	77	40.8	1.6	40.3	2.5	2.8	-1.9	6.9%	-4.7%
	Vgs(th)	77	2.0	0.0	2.1	0.0	0.1	0.1	6.5%	2.4%
Lot03	Idss	77	2.30	0.21	2.21	0.20	-0.05	-0.13	-2.4%	-6.2%
	Igss	77	3.1E-05	2.0E-05	6.8E-05	3.9E-05	3.5E-04	-2.8E-05		
	Rds(on)	77	41.4	1.9	40.9	2.5	2.7	-1.8	6.5%	-4.6%
	Vgs(th)	77	2.1	0.1	2.2	0.1	0.1	0.1	5.1%	3.5%

HTRB			Pre Stress		1000 HOUR READPOINT					
		Sample	Mean	StdDev	Mean	Stdev	Max Shift	Min Shift	Max % Shift	Min % Shift
Lot01	Idss	77	2.40	0.23	2.25	0.20	0.34	-0.60	18.6%	-21.2%
	Igss	77	-6.3E-05	3.1E-05	-5.9E-05	5.9E-05	2.6E-04	-2.6E-04		
	Rds(on)	77	39.7	1.7	42.8	2.3	4.8	-0.2	11.9%	-0.5%
	Vgs(th)	77	2.0	0.0	2.1	0.0	0.1	-0.1	7.1%	-4.7%
Lot02	Idss	77	2.27	0.24	2.19	0.22	0.13	-0.36	6.2%	-14.3%
	Igss	77	4.3E-06	4.3E-05	1.6E-08	7.4E-05	3.8E-04	-2.0E-04		
	Rds(on)	77	41.2	1.8	44.0	2.4	5.9	-1.2	14.5%	-2.7%
	Vgs(th)	77	2.0	0.0	2.1	0.0	0.1	0.0	2.5%	1.4%
Lot03	Idss	77	2.38	0.24	2.28	0.22	0.16	-0.18	6.9%	-8.1%
	Igss	77	1.1E-05	4.7E-05	-5.6E-06	4.7E-05	1.1E-04	-3.4E-04		
	Rds(on)	77	41.5	1.7	44.9	2.3	6.2	-0.6	15.5%	-1.3%
	Vgs(th)	77	2.0	0.0	2.0	0.0	0.0	0.0	1.0%	-1.0%

HTSL			Pre Stress		1000 HOUR READPOINT					
		Sample	Mean	StdDev	Mean	Stdev	Max Shift	Min Shift	Max % Shift	Min % Shift
Lot01	Idss	77	2.27	0.22	2.19	0.21	0.01	-0.11	0.6%	-5.1%
	Igss	77	7.6E-07	1.8E-05	-5.7E-06	4.8E-05	2.0E-04	-9.0E-05		
	Rds(on)	77	40.8	1.8	41.4	2.6	3.0	-1.0	7.0%	-2.6%
	Vgs(th)	77	2.0	0.0	2.0	0.0	0.0	0.0	1.0%	-2.0%
Lot02	Idss	77	2.46	0.14	2.36	0.14	0.03	-0.18	1.2%	-7.3%
	Igss	77	-3.9E-06	1.7E-05	-6.0E-06	3.0E-05	2.3E-04	-7.7E-05		
	Rds(on)	77	40.7	1.0	40.5	1.5	1.4	-1.5	3.2%	-3.7%
	Vgs(th)	77	2.0	0.0	2.0	0.0	0.0	0.0	0.5%	-2.0%
Lot03	Idss	77	2.29	0.22	2.21	0.18	0.20	-0.40	9.1%	-14.6%
	Igss	77	6.2E-06	1.5E-05	-1.5E-05	3.0E-05	4.9E-05	-2.4E-04		
	Rds(on)	77	40.4	1.9	41.2	2.1	3.6	-0.2	9.5%	-0.4%
	Vgs(th)	77	2.0	0.0	2.0	0.0	0.1	-0.1	5.5%	-5.7%

Power Cycle			Pre Stress		15,000 CYCLE READ POINT					
		Sample	Mean	StdDev	Mean	Stdev	Max Shift	Min Shift	Max % Shift	Min % Shift
Lot01	Idss	77	2.37	0.14	2.35	0.16	0.30	-0.08	12.2%	-3.5%
	Igss	77	2.9E-05	2.9E-05	2.0E-04	6.9E-04	4.2E-03	-7.7E-04		
	Rds(on)	77	40.1	1.5	41.2	1.9	2.5	0.0	6.2%	0.1%
	Vgs(th)	77	2.0	0.0	2.0	0.0	0.1	0.0	4.0%	-0.5%
Lot02	Idss	77	2.27	0.16	2.26	0.18	0.69	-0.24	33.2%	-10.7%
	Igss	77	3.5E-05	1.7E-05	3.1E-04	7.3E-04	3.8E-03	-1.5E-04		
	Rds(on)	77	41.1	1.5	42.5	2.0	4.1	-0.4	9.9%	-0.8%
	Vgs(th)	77	2.0	0.0	2.1	0.0	0.1	0.0	4.5%	-1.0%
Lot03	Idss	77	2.26	0.19	2.23	0.19	0.45	-0.66	21.9%	-25.4%
	Igss	77	2.9E-05	2.8E-05	1.1E-04	8.1E-05	4.9E-04	-7.2E-05		
	Rds(on)	77	41.5	1.8	43.4	2.4	4.0	-1.3	9.1%	-3.0%
	Vgs(th)	77	2.1	0.1	2.1	0.1	0.2	-0.2	8.4%	-7.3%

TC			Pre Stress		1000 CYCLE READPOINT					
		Sample	Mean	StdDev	Mean	Stdev	Max Shift	Min Shift	Max % Shift	Min % Shift
Lot01	Idss	77	2.33	0.27	2.29	0.25	0.03	-0.17	1.6%	-7.6%
	Igss	77	-3.1E-05	3.9E-05	4.5E-05	3.4E-05	3.0E-04	-2.8E-05		
	Rds(on)	77	40.3	2.0	40.4	2.2	1.9	-0.9	4.5%	-2.2%
	Vgs(th)	77	2.0	0.0	2.0	0.0	0.0	0.0	0.5%	-2.0%
Lot02	Idss	77	2.25	0.26	2.23	0.24	0.06	-0.28	2.7%	-13.5%
	Igss	77	1.1E-05	3.8E-05	-1.2E-05	3.1E-05	1.0E-04	-2.9E-04		
	Rds(on)	77	41.7	2.3	41.6	2.4	0.8	-0.9	2.1%	-2.3%
	Vgs(th)	77	2.0	0.0	2.0	0.0	0.0	0.0	0.5%	-0.5%
Lot03	Idss	77	2.41	0.25	2.36	0.23	0.10	-0.14	4.3%	-5.9%
	Igss	77	-9.0E-07	8.4E-05	4.3E-05	3.5E-05	2.8E-04	-5.0E-04		
	Rds(on)	77	41.3	1.7	41.5	1.9	1.9	-1.8	4.5%	-4.3%
	Vgs(th)	77	2.0	0.0	2.0	0.0	0.0	-0.1	-0.5%	-2.9%

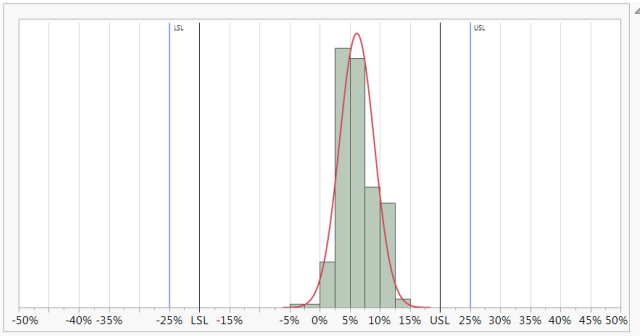
H3TRB			Pre Stress		1000 HOUR READPOINT					
		Sample	Mean	StdDev	Mean	Stdev	Max Shift	Min Shift	Max % Shift	Min % Shift
Lot01	Idss	77	2.28	0.23	2.14	0.23	-0.10	-0.19	-4.6%	-8.7%
	Igss	77	6.1E-07	2.5E-05	7.0E-05	2.9E-04	2.5E-03	-9.9E-05		
	Rds(on)	77	40.8	2.0	39.4	1.8	0.8	-2.8	2.0%	-7.0%
	Vgs(th)	77	2.0	0.0	2.0	0.0	0.0	-0.1	-1.0%	-3.4%
Lot02	Idss	77	2.37	0.18	2.20	0.19	0.21	-0.44	9.5%	-19.1%
	Igss	77	6.1E-05	2.1E-05	1.3E-04	3.6E-04	3.2E-03	-2.3E-04		
	Rds(on)	77	41.6	1.9	40.2	1.8	1.4	-3.5	3.2%	-8.4%
	Vgs(th)	77	2.0	0.0	2.0	0.0	0.0	-0.1	-1.5%	-3.4%
Lot03	Idss	77	2.29	0.22	2.15	0.20	0.07	-0.19	3.7%	-7.8%
	Igss	77	-6.0E-05	1.2E-05	2.7E-04	2.1E-03	1.9E-02	-1.3E-03		
	Rds(on)	77	40.4	1.7	38.5	1.3	0.0	-3.0	0.0%	-7.0%
	Vgs(th)	77	2.0	0.0	2.0	0.0	0.0	0.0	0.5%	-1.0%

UHAST			Pre Stress		96 HOUR READPOINT					
		Sample	Mean	StdDev	Mean	Stdev	Max Shift	Min Shift	Max % Shift	Min % Shift
Lot01	Idss	77	2.29	0.20	2.21	0.23	0.25	-0.77	11.1%	-34.9%
	Igss	77	6.7E-06	4.3E-05	-1.1E-05	1.6E-05	2.1E-04	-2.3E-04		
	Rds(on)	77	40.6	1.8	40.7	2.7	3.8	-1.9	9.1%	-4.9%
	Vgs(th)	77	2.0	0.0	2.1	0.0	0.0	-0.1	2.5%	-3.4%
Lot02	Idss	77	2.38	0.18	2.27	0.18	0.04	-0.20	1.7%	-7.9%
	Igss	77	5.8E-05	1.8E-05	-1.7E-05	2.1E-05	1.5E-05	-1.7E-04		
	Rds(on)	77	41.3	1.5	42.0	2.8	6.7	-2.4	15.6%	-5.6%
	Vgs(th)	77	2.0	0.0	2.0	0.0	0.0	0.0	1.0%	-1.4%
Lot03	Idss	77	2.45	0.24	2.38	0.24	0.17	-0.29	7.2%	-12.3%
	Igss	77	-6.2E-06	2.4E-05	-7.4E-06	4.7E-05	3.8E-04	-9.2E-05		
	Rds(on)	77	39.9	1.7	40.6	2.3	4.7	-5.1	12.0%	-11.9%
	Vgs(th)	77	2.0	0.0	2.0	0.0	0.0	0.0	2.5%	-1.0%

Dynamic Ron Data for HTRB Test (650V)

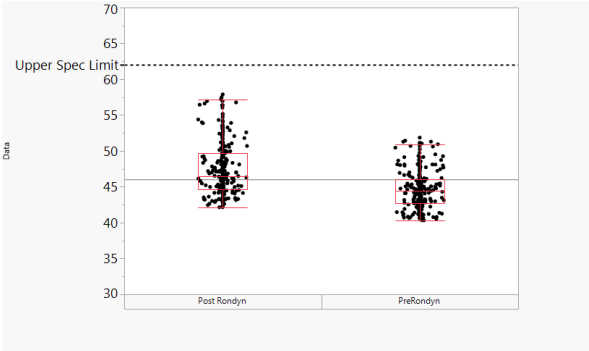
Control of Dyamic Ron (Rondyn) Pre to Post HTRB at 650 volts is an area of special interest in GaN. Sample size was increased to 4 lots to take into account natural variation within process

# Lots	4
Sample size	296
Final Mean Rondyn	44.6
Final Stdev Rondyn	2.6
Mean 1000 Hrs HTRB Rondyn	47.4
Stdev 1000 Hrs HTRB Rondyn	3.7
Max of Rondyn Shift	6.6
Min of Rondyn Shift	-1.4
Max of Percent Rondyn Shift	13.4%
Min of Percent Rondyn Shift	-3.2%
Shift Process Capability	Cpk = 2.1



Upper and lower limits based on Q101 requirement <20% shift in Rondyn after 1000 hours HTRB

Distribution of Percent Dynamic Ron Shift



Box Plot of Pre Stress Test Rondyn versus Post Stress (1000 hours HTRB) Rondyn

Datasheet Parametric Verification

Parameter	Sample Size	Mean	Stdev	Max	Min
Idss at 100V (uA) @25C	90	1.48	0.17	1.76	1.03
Idss at 100V (uA) @ -55C	90	2.47	0.28	2.93	1.65
Idss at 100V (uA) @150C	90	12.90	1.40	16.57	10.37
Idss at 650V (uA) @25C	90	2.13	0.17	2.40	1.54
Idss at 650V (uA) @ -55C	90	4.17	0.36	4.79	3.03
Idss at 650V (uA) @150C	90	13.62	1.60	17.86	10.86
Idss at 700V (uA) @25C	90	2.14	0.17	2.41	1.54
Idss at 700V (uA) @ -55C	90	4.20	0.36	4.83	3.06
Idss at 700V (uA) @150C	90	13.73	1.64	18.03	11.00
Idss at 750V (uA) @25C	90	2.15	0.17	2.42	1.55
Idss at 750V (uA) @ 150C	90	13.86	1.68	18.21	11.23
Idss at 750V (uA) @ -55C	90	4.23	0.36	4.87	3.08
Igss at 20V (A) @25C	90	1.1E-10	2.6E-10	2.3E-09	-5.1E-10
Igss at 20V (A) @ 150C	90	4.7E-09	2.2E-09	8.1E-09	2.9E-10
Igss at 20V (A) @ -55C	90	5.3E-11	1.6E-10	2.8E-10	-1.2E-09
Ron at 22A @ -55C	90	26.48	1.31	29.10	24.10
Ron at 22A @150C	90	87.80	3.77	97.20	80.50
Ron at 22A @25C	90	40.99	1.33	44.60	38.30
Ron at 8A @ -55C	90	26.62	1.42	29.70	24.00
Ron at 8A @150C	90	86.80	3.66	96.60	79.20
Ron at 8A @25C	90	40.93	1.28	44.20	38.30
Vth at 700uA (V) @25C	90	2.06	0.03	2.17	1.99
Vth at 700uA (V) @ 150C	90	1.31	0.04	1.42	1.24
Vth at 700uA (V) @ -55C	90	2.39	0.03	2.50	2.30
Ciss(pF)@400(V)	75	2101.85	45.84	2229.80	2025.60
Co(er)(pF)@400(V)	75	198.70	6.84	208.70	179.10
Co(tr)(pF)@400(V)	75	309.41	10.83	327.70	280.40
Coss(pF)@400(V)	75	144.32	4.05	149.70	132.60
Crss(pF)@400(V)	75	20.70	0.82	24.20	19.10
Dyn_Co(er)(pF)@400(V)	75	192.34	6.62	202.00	173.40
Dyn_Co(tr)(pF)@400(V)	75	299.50	10.48	317.20	271.40
Dyn_Coss(pF)@400(V)	75	139.69	3.92	144.90	128.40
ID100C	75	26.38	1.76	29.63	23.29
ID25C	75	41.71	2.78	46.85	36.83
Imax(A)	75	169.10	8.09	185.10	151.60
QC(nC)	75	10.24	0.23	10.80	9.80
Qg(nC)	75	26.66	0.69	29.20	25.20
QGD(nC)	75	9.08	0.38	10.70	8.30
QGS(nC)	75	7.35	0.16	7.80	7.10
Rth (C/W)	75	0.69	0.09	0.88	0.54
td(off)(ns)	75	39.30	1.17	41.60	37.40
td(on)(ns)	75	33.13	0.60	34.60	31.60
tf(ns)	75	8.39	0.28	9.00	7.40
Qrr	75	118.96	4.66	127.77	107.99
tr(ns)	75	7.08	0.35	7.80	6.20
VSD @22A	75	1.88	0.08	2.05	1.72
VSD@11A	75	1.33	0.06	1.45	1.24

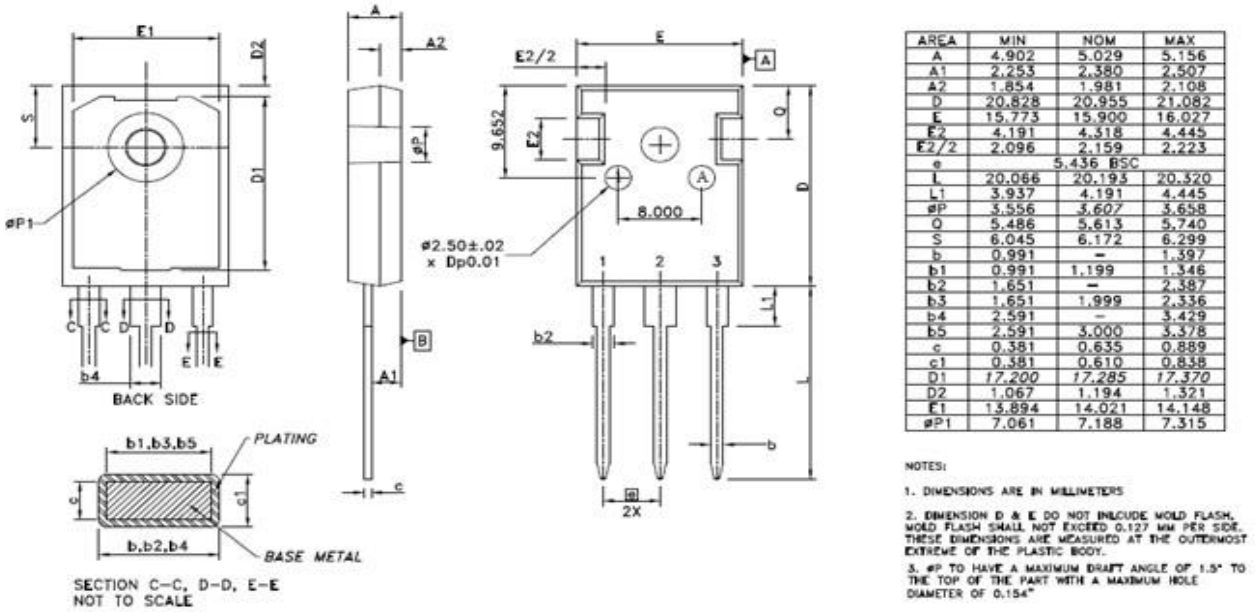
Mechanical
Data

- Physical Dimension - Per JESD22-B100B
- WIREPULL
- BALL SHEAR
- DIE SHEAR
- Lead Integrity - Per JESD22-B105D
- Resistance to Solder Heat- Per JESD22-B106D
- Solderability Test- Per JESD22-B102E
- DPA (ASSEMBLY)

Device	Lot #	Mechanical Tests									Remarks
		PD	WPT 6MILS	WPT 2MILS	BST	DS	LIT	RSHT	ST	DPA	
TPH3205 WSB	Lot 1	N/A	0/51	0/30	0/30	0/15	N/A	N/A	N/A	0/1	Passed
	Lot 2	N/A	N/A	N/A	0/30	0/15	N/A	N/A	N/A	N/A	Passed
	Lot 3	N/A	0/51	0/30	N/A	N/A	N/A	N/A	N/A	N/A	Passed
	Lot 4	0/10	N/A	N/A	N/A	N/A	0/10	0/10	0/10	0/1	Passed
	Lot 5	N/A	0/51	0/30	0/30	0/15	N/A	N/A	N/A	0/1	Passed

Note:
PD – Physical Dimension WPT- Wire Pull test BST-Ball shear test
DS-Die shear
LIT – Lead Integrity Test
RSHT – Resistance to Solder Heat Test
ST- Solderability Test
DPA – Destructive Physical Analysis

1)



AREA	MIN	NOM	MAX
A	4.902	5.029	5.156
A1	2.253	2.380	2.507
A2	1.854	1.981	2.108
D	20.828	20.955	21.082
E	15.773	15.900	16.027
E2	4.191	4.318	4.445
E2/2	2.096	2.159	2.223
e		5.436 BSC	
L	20.066	20.193	20.320
L1	3.937	4.191	4.445
øP	3.556	3.607	3.658
Q	5.486	5.613	5.740
S	6.045	6.172	6.299
b	0.991	–	1.397
b1	0.991	1.199	1.346
b2	1.651	–	2.387
b3	1.651	1.999	2.336
b4	2.591	–	3.429
b5	2.591	3.000	3.378
c	0.381	0.635	0.889
c1	0.381	0.610	0.838
D1	17.200	17.285	17.370
D2	1.067	1.194	1.321
E1	13.894	14.021	14.148
øP1	7.061	7.188	7.315

NOTES:

1. DIMENSIONS ARE IN MILLIMETERS
2. DIMENSION D & E DO NOT INCLUDE MOLD FLASH. MOLD FLASH SHALL NOT EXCEED 0.127 MM PER SIDE. THESE DIMENSIONS ARE MEASURED AT THE OUTERMOST EXTREME OF THE PLASTIC BODY.
3. øP TO HAVE A MAXIMUM DRAFT ANGLE OF 1.5° TO THE TOP OF THE PART WITH A MAXIMUM HOLE DIAMETER OF 0.154"

Dimension	Unit #										Min	Max	Average	Remarks
	1	2	3	4	5	6	7	8	9	10				
A	5.03	5.02	5.01	5.01	5.03	5.01	5.03	5.03	5.02	5.01	5.01	5.03	5.02	Passed
A1	2.38	2.44	2.35	2.35	2.33	2.4	2.32	2.41	2.36	2.36	2.32	2.44	2.37	Passed
A2	1.98	1.9	1.96	1.9	1.96	1.99	1.95	1.98	1.96	1.98	1.9	1.99	1.95	Passed
D	20.93	20.91	20.88	20.93	20.92	20.9	20.93	20.91	20.94	20.9	20.88	20.94	20.91	Passed
E	15.82	15.85	15.88	15.92	15.89	15.86	15.88	15.88	15.87	15.85	15.82	15.92	15.87	Passed
E2	4.3	4.32	4.32	4.32	4.31	4.31	4.32	4.3	4.31	4.3	4.3	4.32	4.31	Passed
E2/2	2.14	2.18	2.11	2.13	2.1	2.17	2.13	2.13	2.19	2.17	2.1	2.19	2.15	Passed
L	20.16	20.14	20.19	20.2	20.19	20.17	20.18	20.13	20.16	20.18	20.13	20.2	20.17	Passed
L1	4.24	4.197	4.19	4.21	4.18	4.2	4.19	4.15	4.22	4.19	4.15	4.24	4.20	Passed
øP	3.62	3.609	3.609	3.58	3.59	3.57	3.62	3.61	3.61	3.61	3.57	3.62	3.60	Passed
Q	5.61	5.61	5.62	5.62	5.63	5.61	5.64	5.63	5.63	5.62	5.61	5.64	5.62	Passed
S	6.09	6.11	6.11	6.1	6.06	6.07	6.07	6.09	6.08	6.06	6.06	6.11	6.08	Passed
b	1.23	1.23	1.23	1.22	1.23	1.24	1.23	1.22	1.24	1.22	1.22	1.24	1.23	Passed
b1	1.176	1.18	1.18	1.17	1.19	1.18	1.19	1.18	1.18	1.18	1.17	1.19	1.18	Passed
b2	2.25	2.19	2.2	2.31	2.22	2.19	2.21	2.26	2.21	2.22	2.19	2.31	2.23	Passed
b3	2.2	2.16	2.17	2.28	2.18	2.16	2.17	2.23	2.17	2.18	2.16	2.28	2.20	Passed
b4	3.17	3.19	3.21	3.22	3.18	3.19	3.21	3.21	3.19	3.19	3.17	3.22	3.20	Passed
b5	3.15	3.15	3.16	3.17	3.15	3.16	3.17	3.17	3.15	3.16	3.15	3.17	3.16	Passed
c	0.59	0.595	0.599	0.594	0.592	0.595	0.599	0.601	0.605	0.594	0.59	0.605	0.60	Passed
c1	0.661	0.666	0.654	0.655	0.677	0.648	0.663	0.646	0.672	0.645	0.645	0.677	0.66	Passed
D2	1.198	1.178	1.19	1.14	1.2	1.19	1.18	1.12	1.17	1.17	1.12	1.2	1.17	Passed
E1	13.92	14	14	13.95	13.94	13.95	13.94	13.95	13.95	13.94	13.92	14	13.96	Passed
øP1	7.22	7.23	7.21	7.21	7.22	7.22	7.3	7.22	7.21	7.21	7.21	7.3	7.23	Passed
D1	17.22	17.23	17.22	17.25	17.22	17.21	17.21	17.22	17.23	17.24	17.21	17.25	17.23	Passed

Referenced Documents

a) AEC-Q101: Stress Test Qualification for Automotive Grade Discrete Semiconductors
b) JESD47: Stress-Test Driven Qualification of Integrated Circuits
c) MIL-PRF-38535: Performance specification-Integrated Circuits Manufacturing General Specification for Department of Defense
d) JESD22-A108C: High Temperature Reverse Bias (HTRB)
e) JESD22-A110D: Highly Accelerated Temperature and Humidity Stress Test (HAST)
f) JESD22-A104D: Temperature Cycle (TC)
g) JESD22-A122: Power Cycle (PC)
h) JESD22-A103C: High Temperature Storage Life (HTSL)
i) JESD22-A115B: Electrostatic Discharge Machine Model
j) JS-001-2012: Electrostatic Discharge Human Body Model
k) MIL-STD-883E, 2007.2 Condition A: Vibration Variable Frequency
l) MIL-STD-883E, 2002.3 Condition A: Mechanical Shock

Signature Approval

Ronald Barr
VP Quality
May 1, 2017