Description

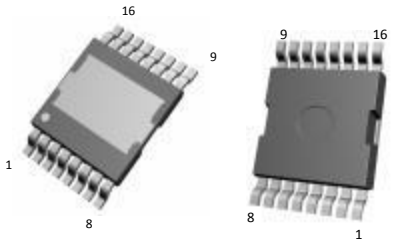
Features

- 110V,200A
- RDS(ON)=2.5mΩ (Typ.) @ VGS =10V
- Advanced SGT Technology
- Provide Excellent RDS(ON) and Low Gate Charge
- 100% UIS Tested

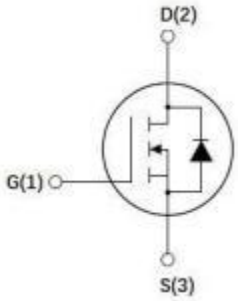
Application

- LCD TV
- Notebook
- Elevator
- Inductive heating
- Power tools

Package



TOLT-16



Package Marking and Ordering Information

Product ID	PACK	Qty（pcs）
RST030N11TTL	TOLT-16	2000

Absolute Maximum Ratings (Tc=25℃ unless otherwise specified)

Symbol	Parameter		Value	Units
VDSS	Drain-Source Voltage		110	V
VGSS	Gate-Source Voltage		±20	V
ID	Continuous Drain Current	TC = 25℃	200	A
		TC = 100℃	126	A
IDM	Pulsed Drain Current note1		800	A
EAS	Single Pulsed Avalanche Energy note2		1225	mJ
PD	Power Dissipation	TC = 25℃	240	W
Derating factor			3.1	℃/W
TJ, TSTG	Operating and Storage Temperature Range		-55 to 150	℃

Thermal resistance ratings

Parameter		Symbl	Max.	Unit
Thermal resistance, junction-to-case	Steady state	RθJC	0.52	°C/W

Electrical Characteristics (Tc=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Static parameter						
Drain to source breakdown voltage	V(BR)DSS	VGS = 0 V, ID = 1 mA	110			V
Gate-source threshold voltage	VGS(th)	VDS = VGS, ID = 250 μA	2.5	3.3	4.1	V
Gate-body leakage	IGSS	VDS = 0 V, VGS = ±20 V			±100	nA
Zero gate voltage drain current	IDSS	VDS = 105 V, VGS = 0 V			1	μA
Drain-source on-resistance	RDS(on)	VGS = 10 V, ID = 50 A		2.5	3.0	mΩ
Forward transconductance(5)	gfs	VDS = 5 V, ID = 100 A		150		S
Gate resistance	Rg	f= 1 MHz		1.2		Ω
Dynamic(5)						
Total gate charge	Qg	VDS = 50 V, ID = 100 A, VGS = 10 V		112		nC
Gate-source charge	Qgs			28		
Gate-drain charge	Qgd			30		
Turn-on delay time	td(on)	VDS = 50 V, ID = 100 A, VGS = 10 V,RGEN = 6 Ω		56		ns
Rise time	tr			78		
Turn-off delay time	td(off)			75		
Fall time	tf			68		
Input capacitance	Ciss	VDS = 50 V, VGS = 0 V, f= 1 MHz		6730		pF
Output capacitance	Coss			1460		
Reverse transfer capacitance	Crss			59		
Reverse Diode Characteristics(5)						
Diode forward voltage	VSD	VGS = 0 V, IF = 100 A		0.85	1.2	V
Reverse recovery time	trr	VDS = 50 V, IF = 100 A, di/dt = 100 A/μs		82		ns
Reverse recovery charge	Qrr			209		nC

Notes

1.Package limited.

2.Pulse width limited by maximum junction temperature.

3. V_{DS} = 75 V, V_{GS} = 10 V, L = 0.5 mH.

4.$R_{\theta JA}$ is determined with the device mounted on a 1 in^2 pad 2 oz copper pad on a 1.5x1.5 in. board of FR-4 material.

5.Guaranteed by design, not subject to production testing.

pical Performance Characteristics

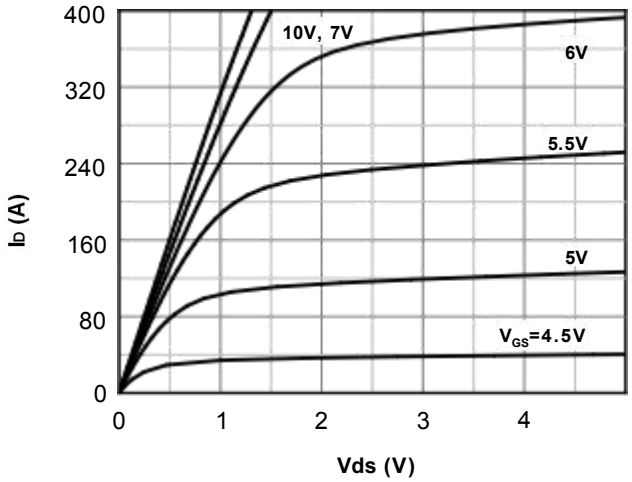


Figure 1 Output Characteristics

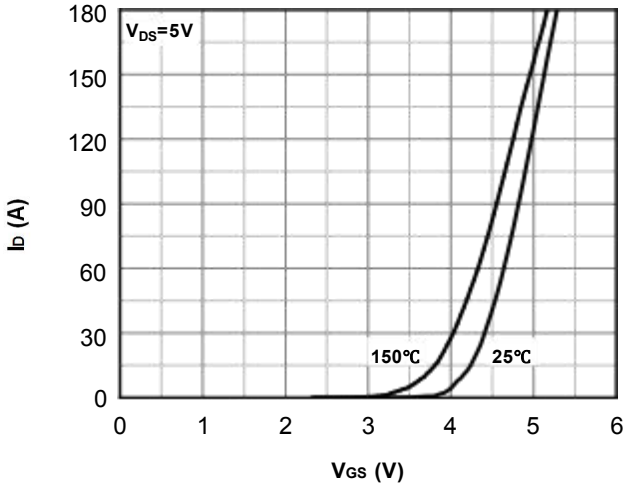


Figure 2 Transfer Characteristics

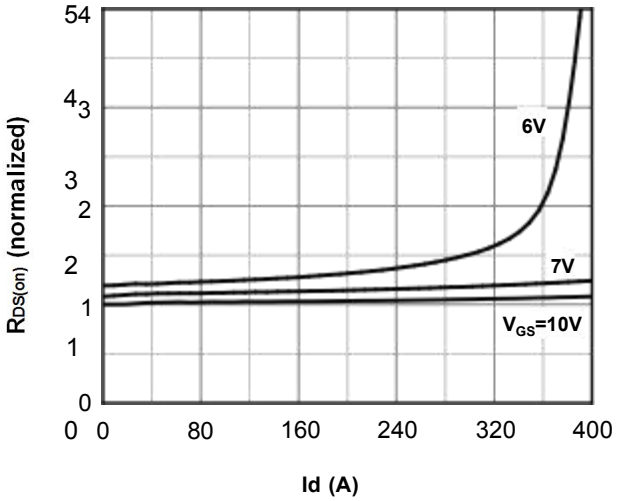


Figure 3 Normalized Rdson- Drain Current

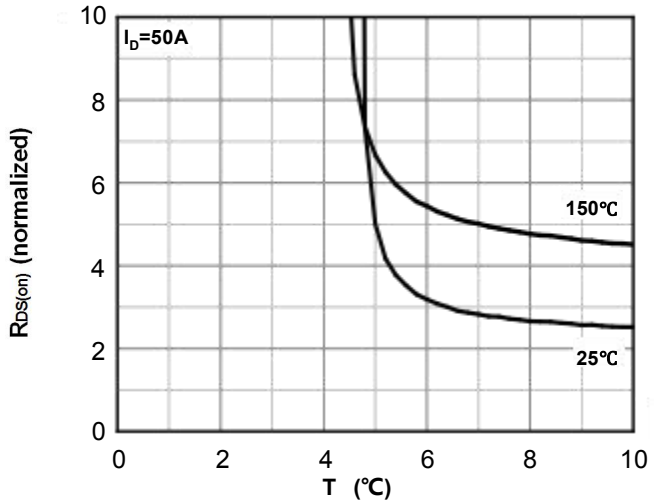


Figure 4 Normalized Rdson-Junction Temperature

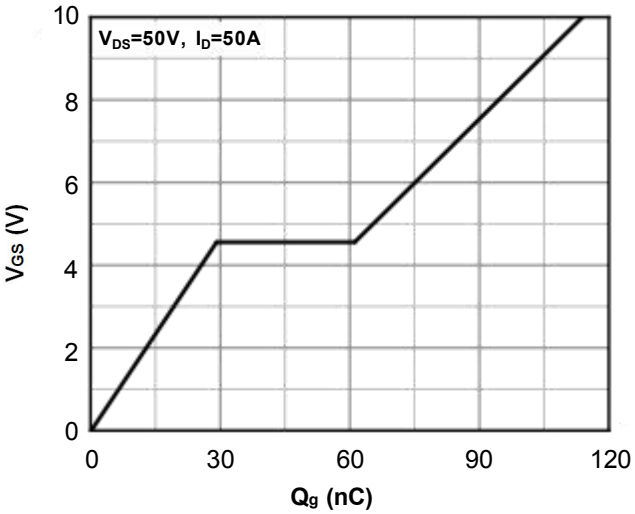


Figure 5 Typ. gate charge

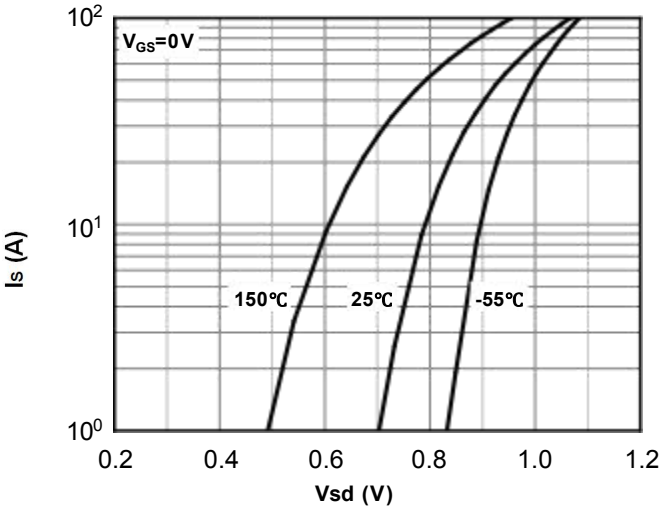


Figure 6 Source- Drain Diode Forward

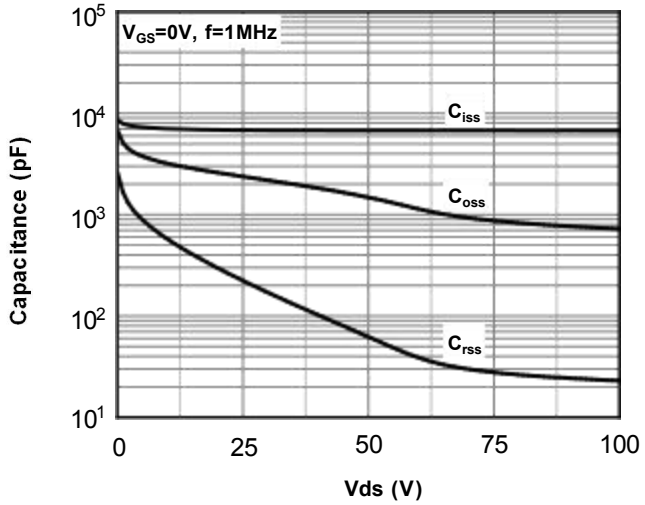


Figure 7 Capacitance vs Vds

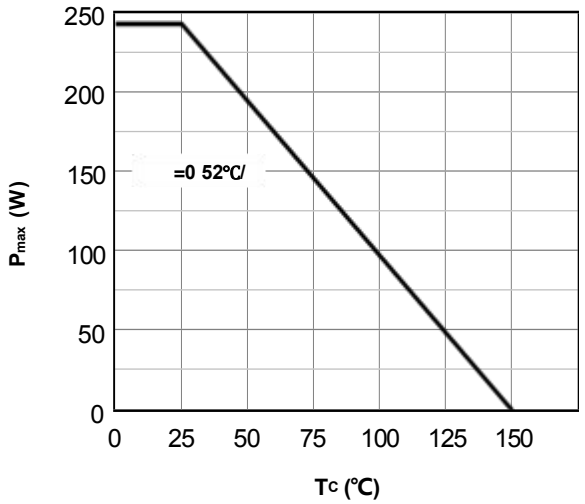


Figure 8 Power De-rating

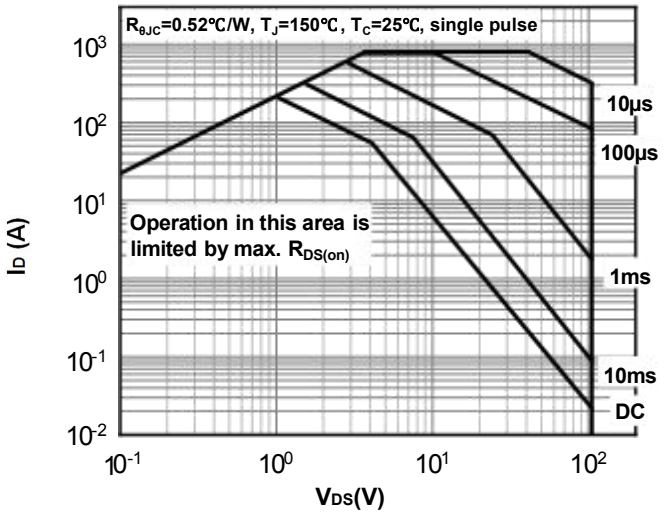


Figure 9 Safe Operation Area

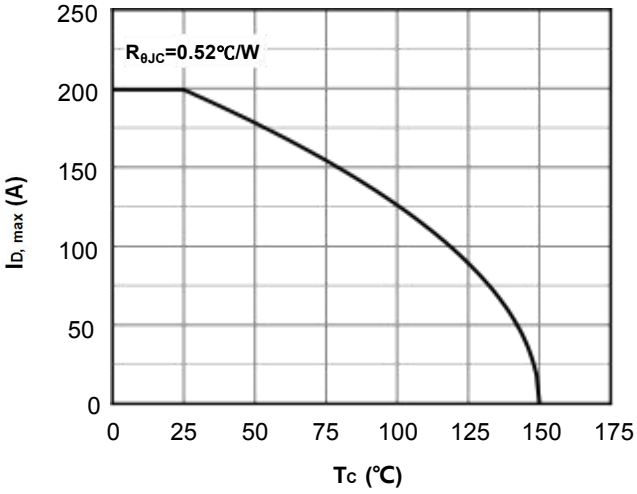


Figure 10 Current De-rating

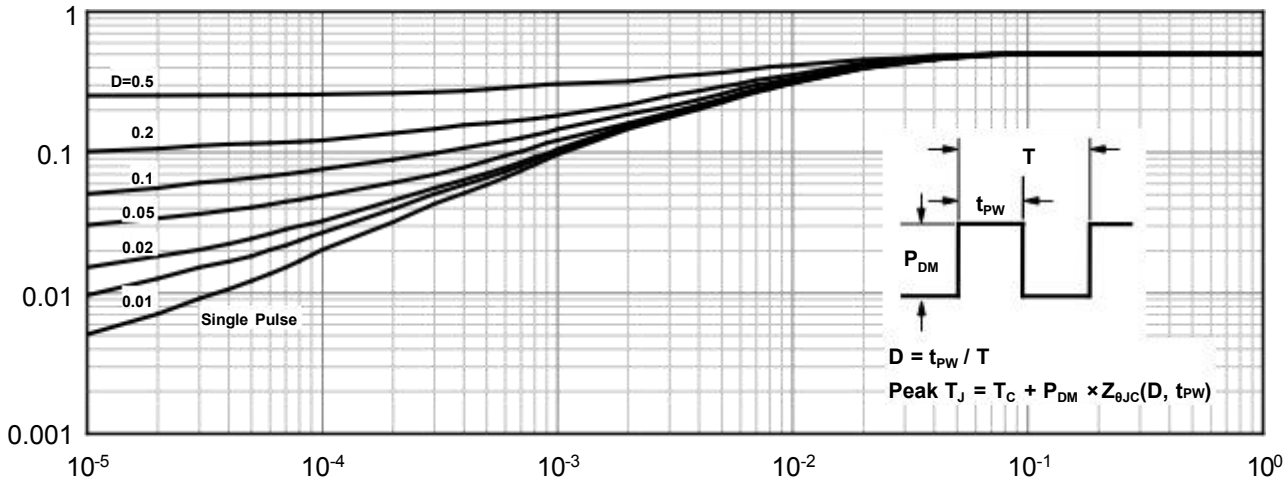
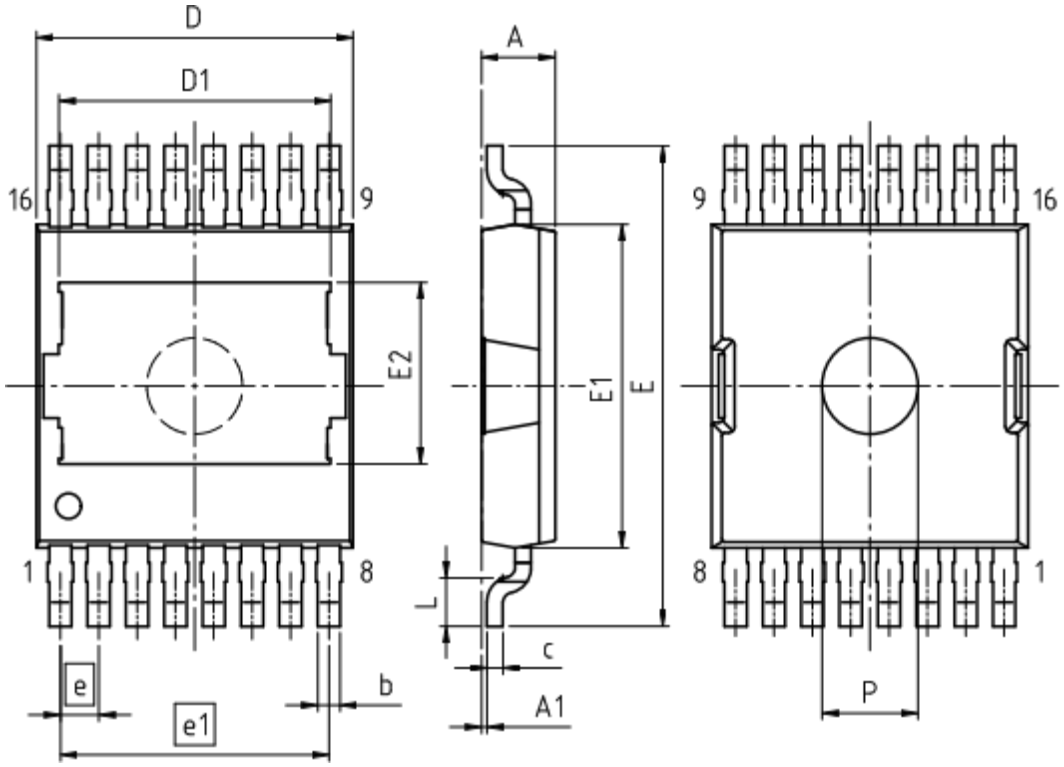


Figure 11 Transient Thermal Impedance From Junction To Case

TOLT-16 Package Information



PACKAGE - GROUP NUMBER:	PG-HDSOP-16-U01	
REVISION: 01	DATE: 18.12.2020	
DIMENSIONS	MILLIMETERS	
	MIN.	MAX.
A	2.25	2.35
A1	0.01	0.16
b	0.60	0.80
c	0.40	0.60
D	9.70	10.10
D1	8.20	8.40
E	14.80	15.20
E1	10.00	10.30
E2	5.57	5.77
e	1.20	
e1	8.40	
L	1.40	1.60
P	2.90	3.10