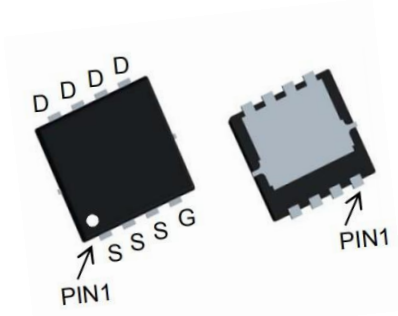


Features

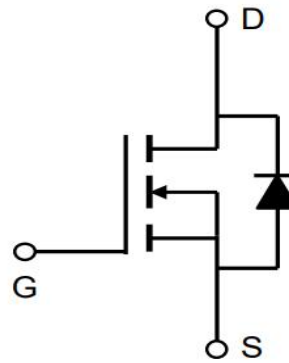
The TW65N04CC is the high cell density trench N- ch MOSFETs, which provide excellent RDSON and gate charge for most of the synchronous buck converter applications. The TW65N04CC meet the RoHS and Green Product requirement, 100% EAS guaranteed with full function reliability approved.



PDFN3X3

Product Summary

V_{DS}	40V
I_D	65A
$R_{DS(ON)}$ (at $V_{GS} = 10V$)	$< 7.8m\Omega$
$R_{DS(ON)}$ (at $V_{GS} = 4.5V$)	$< 13.3m\Omega$



Maximum Ratings($T_a=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	40	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current, $V_{GS} @ 10V^1$	$I_{D@TC=25^\circ C}$	65	A
Continuous Drain Current, $V_{GS} @ 10V^1$	$I_{D@TC=100^\circ C}$	35	
Pulsed Drain Current ①	I_{DM}	130	
Single Pulse Avalanche Energy ³	EAS	48	mj
Avalanche Current	IAS	35	A
Power Dissipation ②	P_D	39	W
Storage Temperature	T_{STG}	$-55 \sim +150$	$^\circ C$
Operating Junction	T_J	$-55 \sim +151$	$^\circ C$

Thermal Data

Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$		3.2	$^\circ C/W$

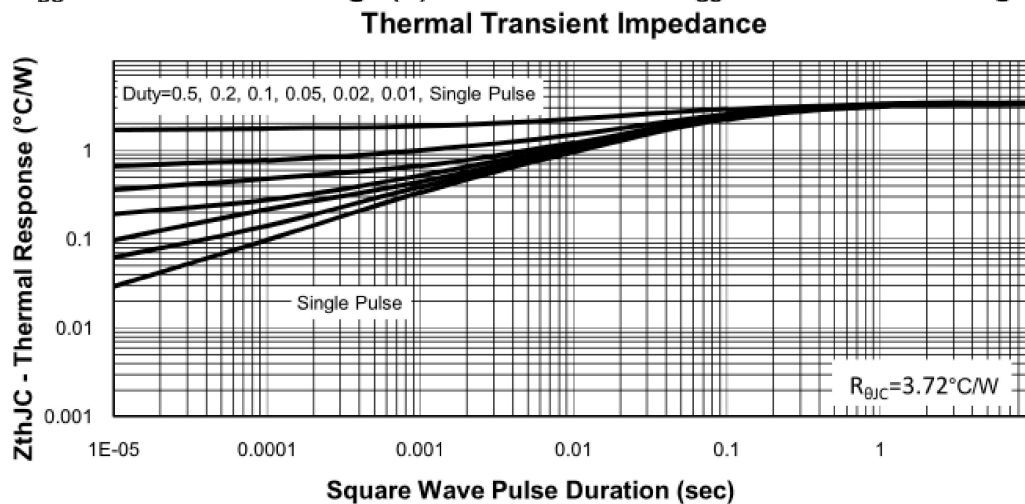
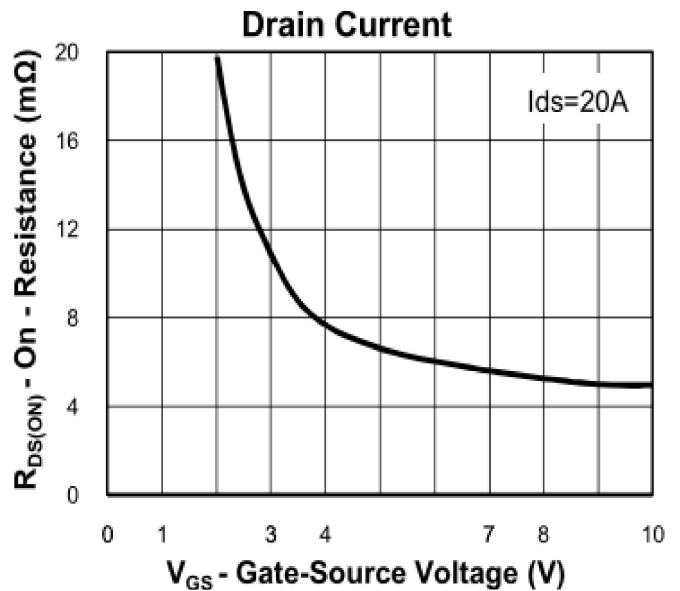
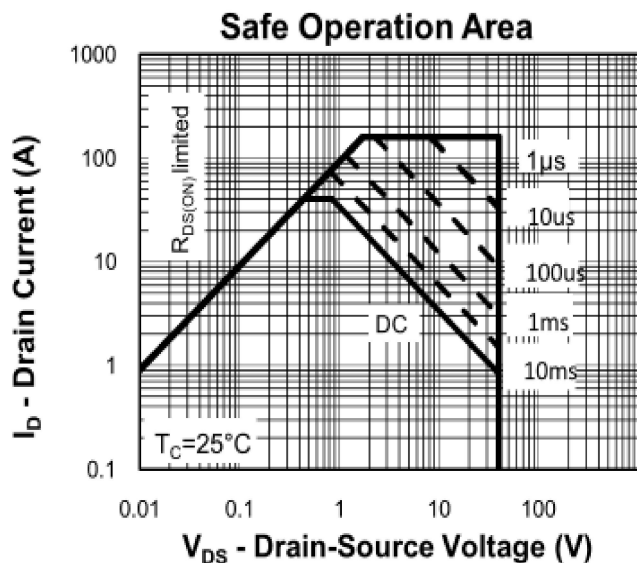
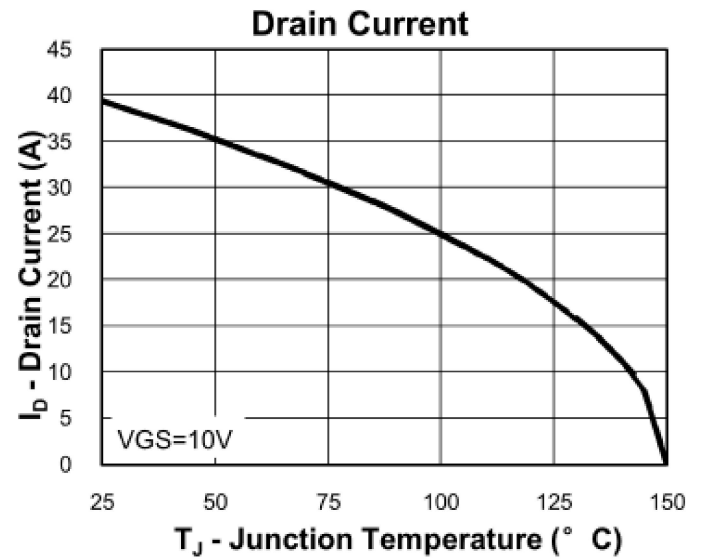
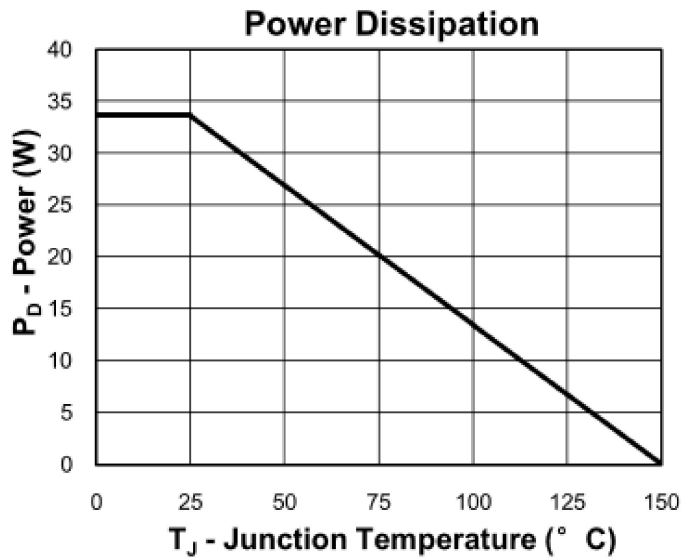
Electrical Characteristics (T_J=25°C unless otherwise noted)

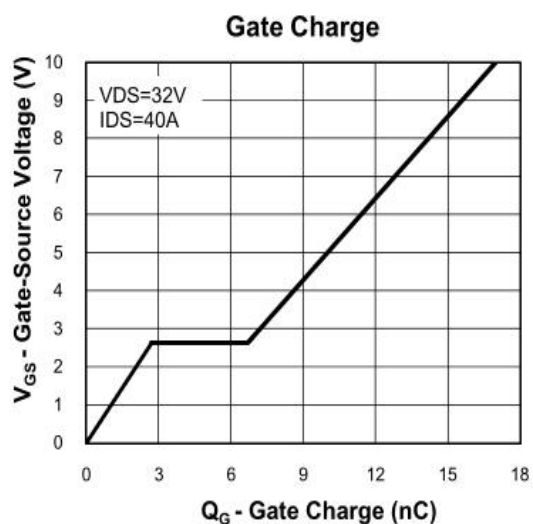
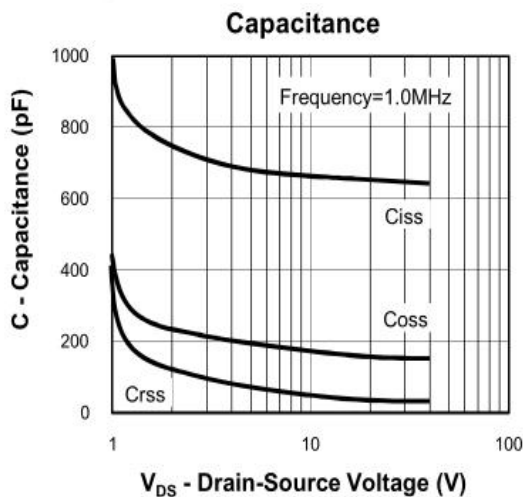
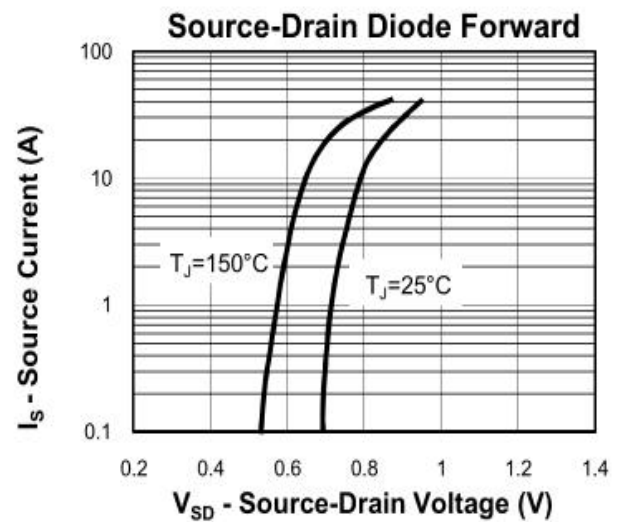
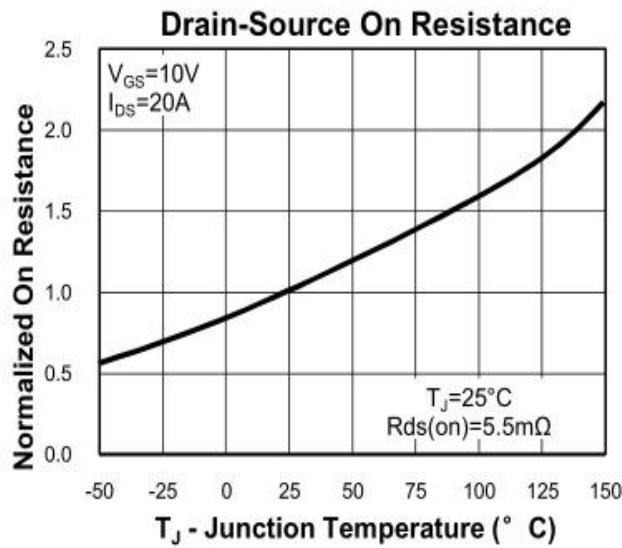
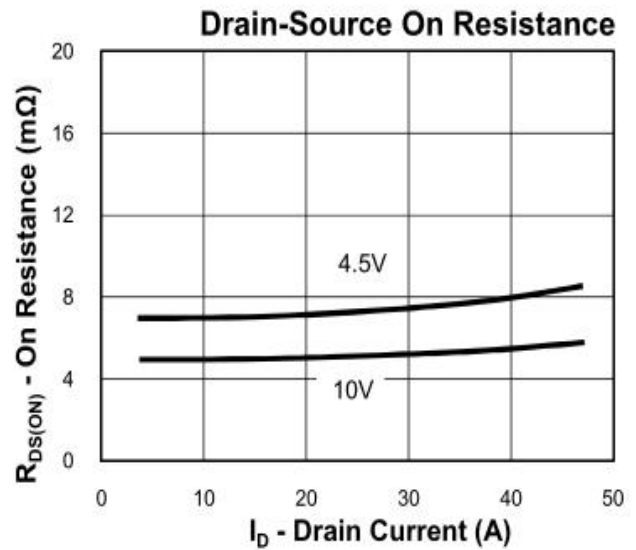
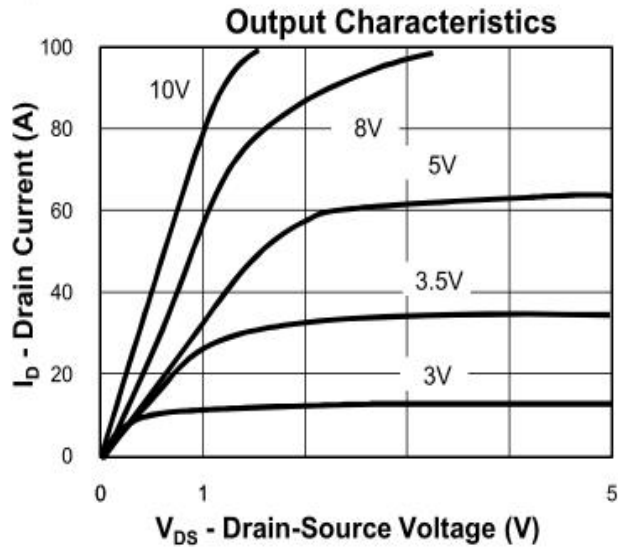
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Parameters ③						
Drain-Source Breakdown Voltage	BVDSS	VGS = 0V, ID = 250μA	40			V
Zero Gate Voltage Drain Current	IDSS	VDS = 32V, VGS =0V			1	μA
Gate-Body leakage Current	IGSS	VDS =0V, VGS = ±20V			±100	nA
Gate Threshold Voltage	VGS(th)	VDS =VGS, ID = 250μA	1.35		3	V
Static Drain-Source On-Resistance	RDS(on)	VGS = 10V, ID = 12A		5.8	7.8	mΩ
		VGS = 4.5V, ID = 10A		8.2	13.3	mΩ
Dynamic Parameters ④						
Input Capacitance	Ciss	VDS=15V , VGS=0		1048		pF
Output Capacitance	Coss			187		pF
Reverse Transfer Capacitance	Crss			178		pF
Total Gate Charge	Qg	VDS=20V , VGS=4.5		28		nC
Gate Source Charge	Qgs			4		nC
Gate Drain Charge	Qgd			6		nC
Switching Parameters ④						
Turn-On DelayTime	td(on)	VDD=15V , VGS=10V , RG=3.3Ω ID=1A		14.3		ns
Turn-On Rise Time	tr			5.6		ns
Turn-Off DelayTime	td(off)			20		ns
Turn-Off Fall Time	tf			11		ns
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain to Source Diode Forward Current		IS			65	A
Drain to Source Diode Forward Voltage	VSD	VGS=0V, IS=30A			1	V

Note :

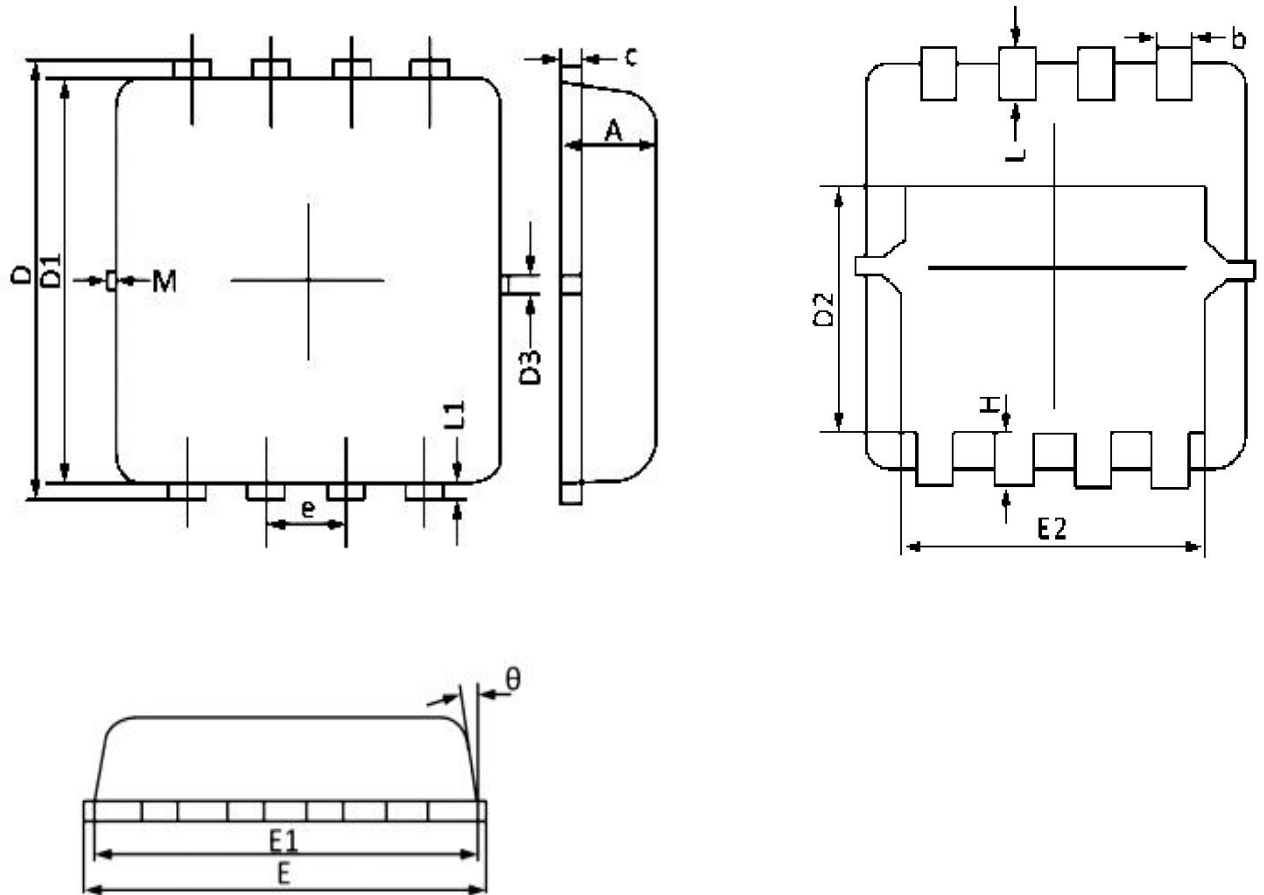
1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 5 sec.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics





PDFN3X3 Package Outline Dimesions



DIMENSIONS(unit:mm)

Symbol	Min	Typ	Max	Sybol	Min	Typ	Max
A	0.70	0.75	0.80	b	0.25	0.30	0.35
C	0.10	0.15	0.25	D	3.25	3.35	3.45
D1	3.00	3.10	3.20	D2	1.78	1.88	1.98
D3		0.13		E	3.20	3.30	3.40
E1	3.00	3.15	3.20	E2	2.39	2.49	2.59
e	0.65BSC			H	0.30	0.39	0.50
L	0.30	0.40	0.50	L1		0.13	
θ		10°	12°	M	★	★	0.15