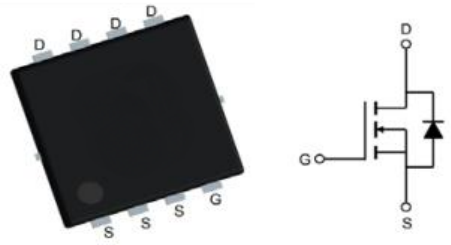
Features

- N-Channel，*Low $R_{DS(on)}$ @V_{GS}=-10V*
- *-5V Logic Level Control*
- *100% UIS Tested*
- *Pb−Free, RoHS Compliant*

$V_{(BR)DSS}$	$R_{DS(ON)}$ Typ	I_D Max
-30V	17mΩ @ -10V	-35A
	26.5mΩ @ -4.5V	

Applications

- Power management
- *Load Switch*
- Battey management
- Adaptor switch



PDFN3X3

Order Information

Product	Package	Marking	Packing
CT32RP03M	PDFN3X3	025P03	5000PCS/Reel

Absolute Maximum Ratings

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Symbol	Parameter		Rating	Unit
Common Ratings (T_J=25°C Unless Otherwise Noted)				
V_{GS}	Gate-Source Voltage		±20	V
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage		-30	V
T_J	Maximum Junction Temperature		150	℃
T_{STG}	Storage Temperature Range		-50 to 150	℃
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested①	T_C=25°C	-95	A
I_S	Diode continuous forward current	T_C=25°C	-28	A
I_D	Continuous Drain Current	T_C=25°C	-28	A
		T_C=70°C	-22.4	
P_D	Maximum Power Dissipation	T_C=25°C	31	W
EAS	Avalanche energy, single pulsed ②		54	mJ
$R_{\theta JC}$	Thermal Resistance-Junction to Case		4	°C/W

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V I_D=-250μA	-30	–	–	V
I_{DSS}	Zero Gate Voltage Drain Current(T_C=25℃)	V_{DS}=-30V, V_{GS}=0V	–	–	1	μA
	Zero Gate Voltage Drain Current(T_C=125℃)	V_{DS}=-24V, V_{GS}=0V	–	–	100	uA
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±20V, V_{DS}=0V	–	–	±100	nA
$V_{GS(TH)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=-250μA	-1.0	-1.6	-2.5	V
$R_{DS(ON)}$	Drain-Source On-State Resistance③	V_{GS}=-10V, I_D=-15A	–	17	25	mΩ
$R_{DS(ON)}$	Drain-Source On-State Resistance③	V_{GS}=-4.5V, I_D=-10A	–	26.5	35	mΩ
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
C_{iss}	Input Capacitance	V_{DS}=-15V, V_{GS}=0V, f=1MHz	–	1002	–	pF
C_{oss}	Output Capacitance		–	200	–	pF
C_{rss}	Reverse Transfer Capacitance		–	144	–	pF
R_g	Gate Resistance	f=1MHz		12		Ω
Q_g	Total Gate Charge	V_{DS}=-15V I_D=-15A, V_{GS}=-10V	–	18	–	nC
Q_{gs}	Gate Source Charge		–	3.2	–	nC
Q_{gd}	Gate Drain Charge		–	2.6	–	nC
Switching Characteristics @ T_J = 25°C (unless otherwise stated)						
$t_{d(on)}$	Turn on Delay Time	V_{DD}=-15V, I_D=-1A, R_G=6Ω, V_{GS}=-10V	–	8	–	ns
t_r	Turn on Rise Time		–	15.5	–	ns
$t_{d(off)}$	Turn Off Delay Time		-	42	–	ns
t_f	Turn Off Fall Time		–	10.5	–	ns
Source Drain Diode Characteristics @ T_J = 25°C (unless otherwise stated)						
I_{SD}	RSource drain current(Body Diode)	TC =25°C	–	---	-28	A
V_{SD}	Forward on voltage③	I_{SD}=-8A,V_{GS}=0V	–	-0.87	-1.2	V

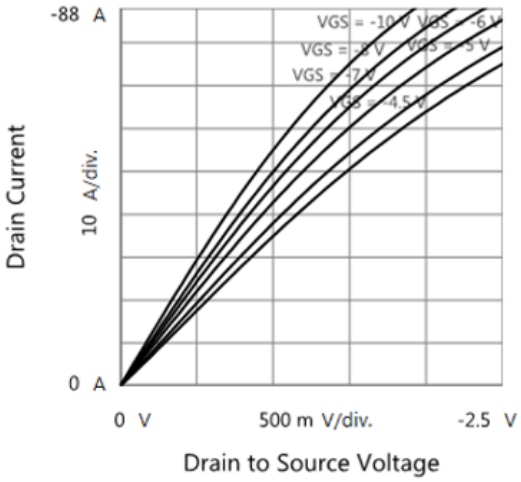
Notes: ① Pulse width limited by maximum allowable junction temperature

② Limited by TJmax, starting TJ = 25°C, L = 0.3mH,RG = 25Ω, IAS = 28A, VGS =10V. Part not recommended for use above this value

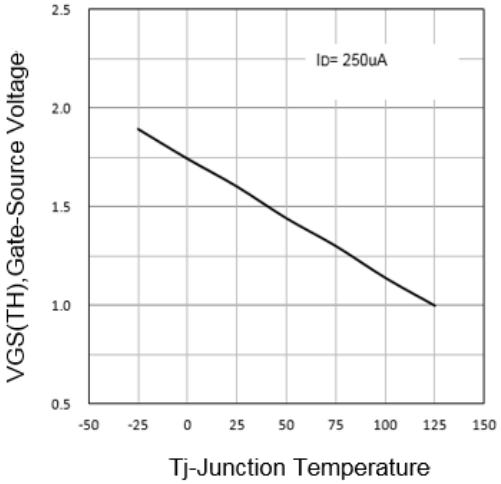
③ Pulse width ≤ 300μs; duty cycle≤ 2%.

Typical Characteristics

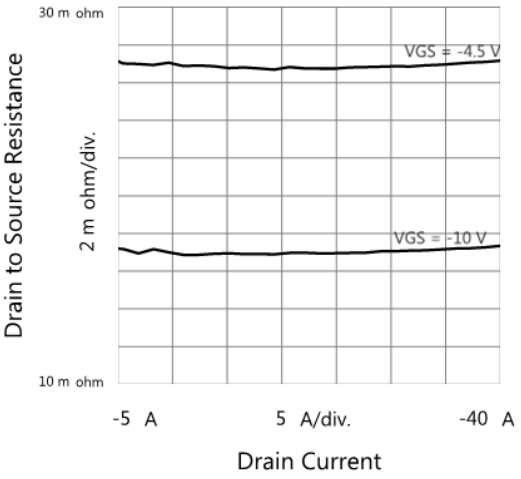
Output Characteristics



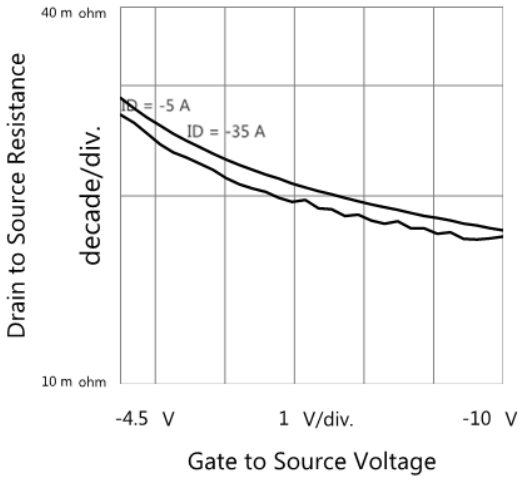
Tj-Junction Temperature



Drain to Source Resistance vs. Drain Current

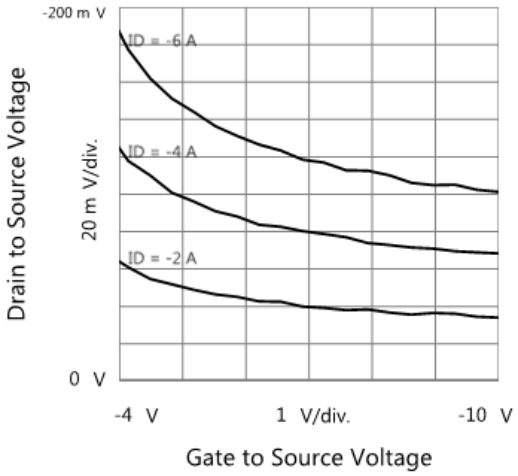


Drain to Source Resistance vs. Gate to Source Voltage

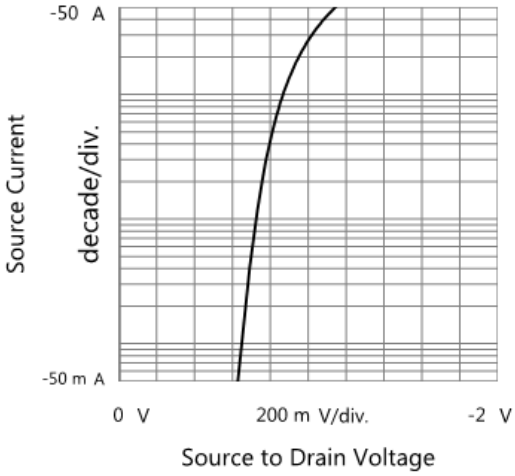


Typical Characteristics

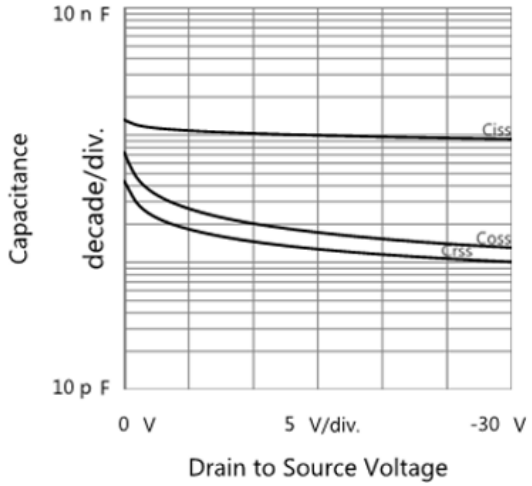
Drain to Source Voltage vs. Gate to Source Voltage



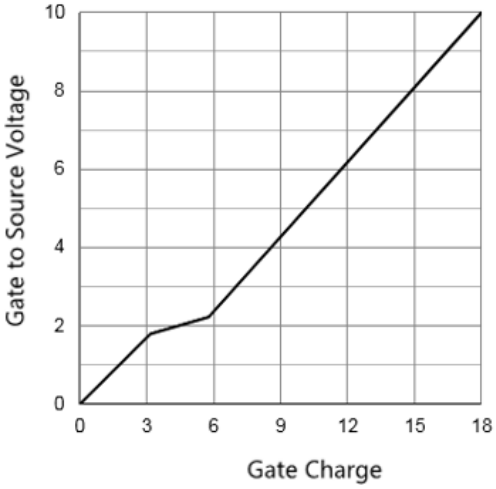
Body Diode Forward Characteristics



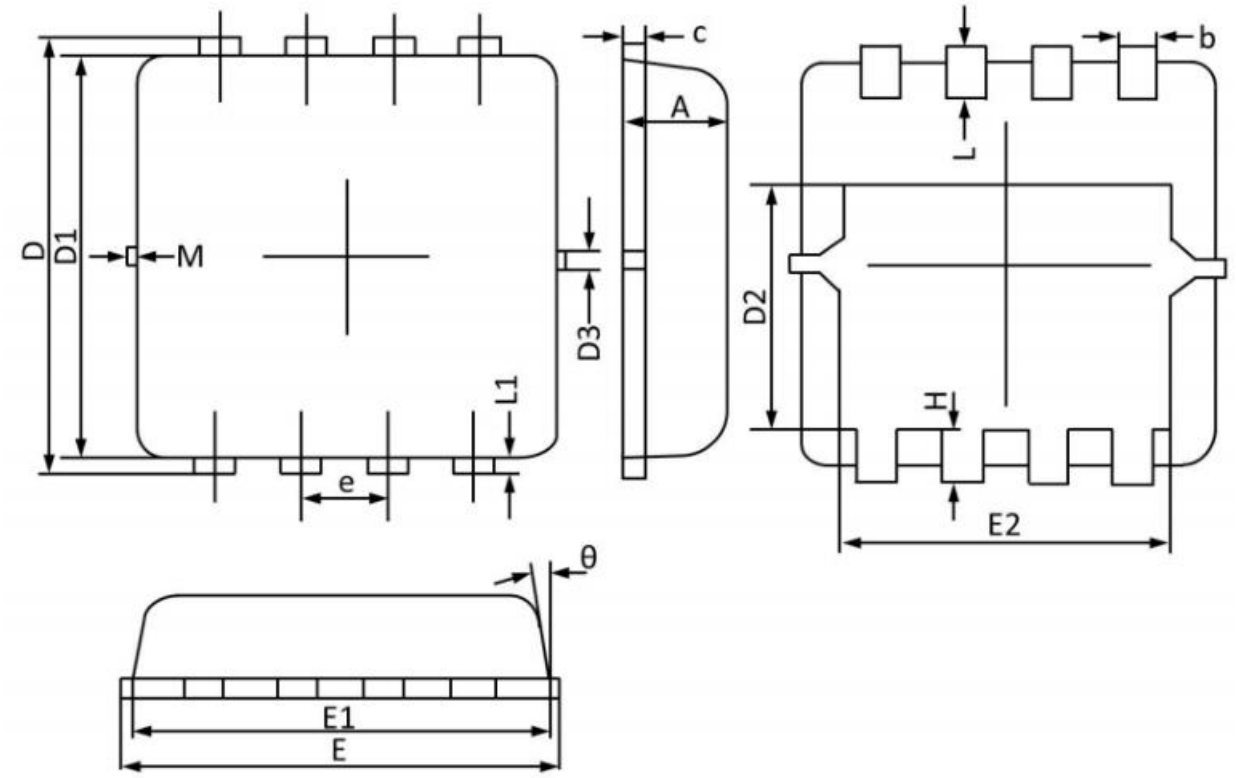
Capacitances



Gate Charge



PDFN3X3 Mechanical Data



DIMENSIONS (unit : mm)

Symbol	Min	Typ	Max	Symbol	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

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