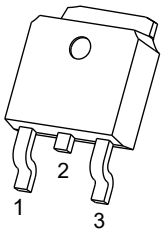
CTKD80N03

N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
30V	3.8mΩ@10V	80A
	5.3mΩ@4. 5V	

TO-252-2L



1. GATE
2. DRAIN
3. SOURCE

FEATURES

- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized Avalanche voltage and current
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation
- Special process technology for high ESD capability

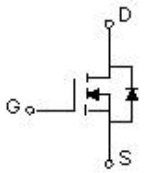
APPLICATIONS

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible Power Supply

MARKING



EQUIVALENT CIRCUIT



MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D ①	80	A
Pulsed Drain Current	I_{DM} ②	320	A
Single Pulsed Avalanche Energy	E_{AS} ③	306	mJ
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	100	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 ~+150	℃
Lead Temperature for Soldering Purposes(1/8'' from case for 10s)	T_L	260	℃

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)\,DSS}$	V_{GS} = 0V, I_D =250μA	30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =30V, V_{GS} =0V			1	μA
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
On characteristics ④						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1.0	1.5	2.0	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =30A		3.8	5	m Ω
		V_{GS} =5V, I_D =24A		5.3	7	m Ω
Forward transconductance	g_{FS}	V_{DS} =5V, I_D =24A	20			S
Dynamic characteristics ④⑤						
Input capacitance	C_{iss}	V_{DS} =15V,V_{GS} =0V, f =1MHz		2160		pF
Output capacitance	C_{oss}			272		
Reverse transfer capacitance	C_{rss}			264		
Switching characteristics ④⑤						
Total gate charge	Q_g	V_{DS}=10V, V_{GS}=10V, I_D=30A		44		nC
Gate-source charge	Q_{gs}			6		
Gate-drain charge	Q_{gd}			11		
Turn-on delay time	$t_{d(on)}$	V_{DD}=15V,I_D=30A, V_{GS}=10V,R_G=2.7Ω		20		ns
Turn-on rise time	t_r			15		
Turn-off delay time	$t_{d(off)}$			60		
Turn-off fall time	t_f			10		
Drain-Source Diode Characteristics						
Drain-source diode forward voltage	V_{SD} ④	V_{GS} =0V, I_S=24A			1.2	V
Continuous drain-source diode forward current	I_S ①				80	A
Pulsed drain-source diode forward current	I_{SM} ②				320	A

Notes:

1.T_C=25℃ Limited only by maximum temperature allowed.

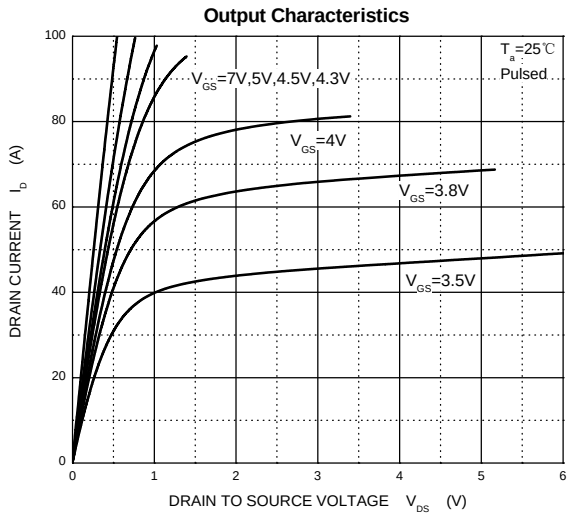
2.P_W≤10μs, Duty cycle≤1%.

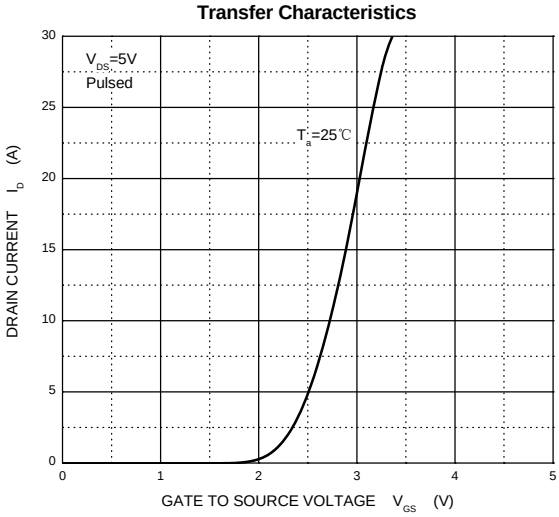
3.EAS condition: V_{DD}=30V,V_{GS}=10V, L=0.5mH, Rg=25Ω Starting T_J = 25°℃.

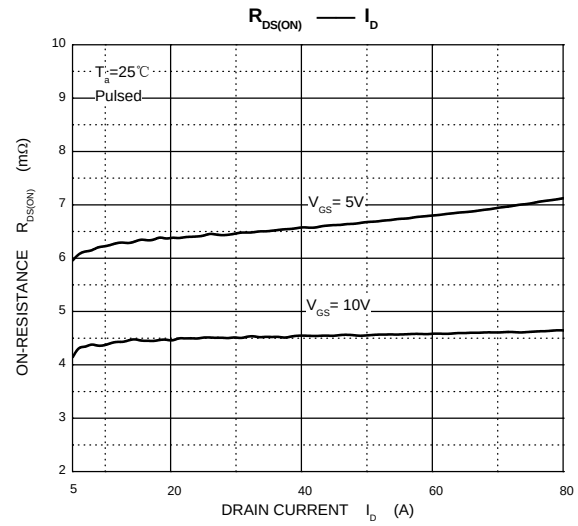
4.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.

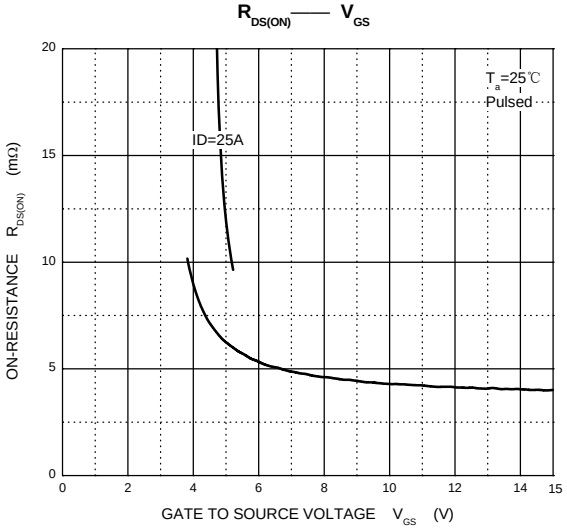
5.Guaranteed by design, not subject to production.

Typical Characteristics

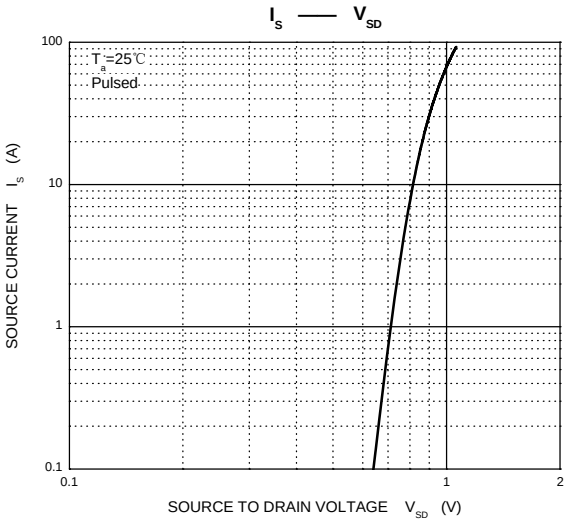


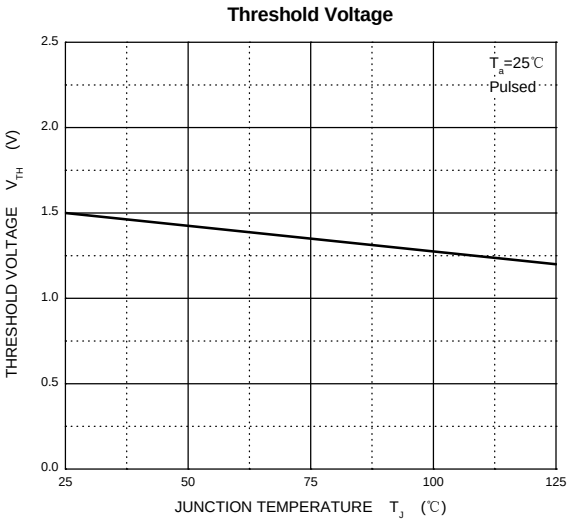


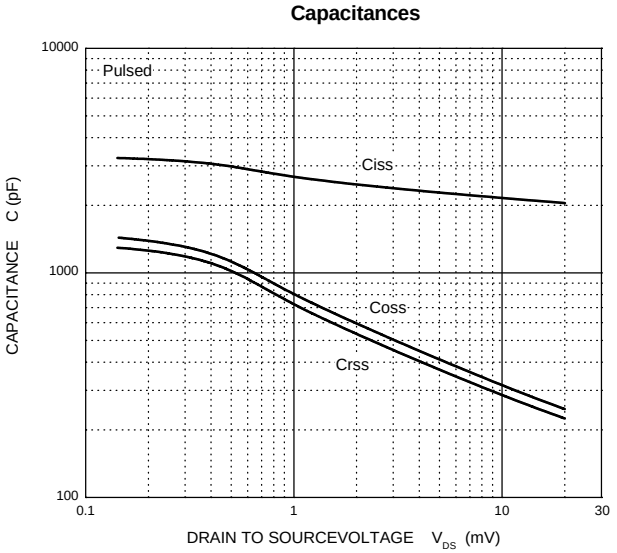


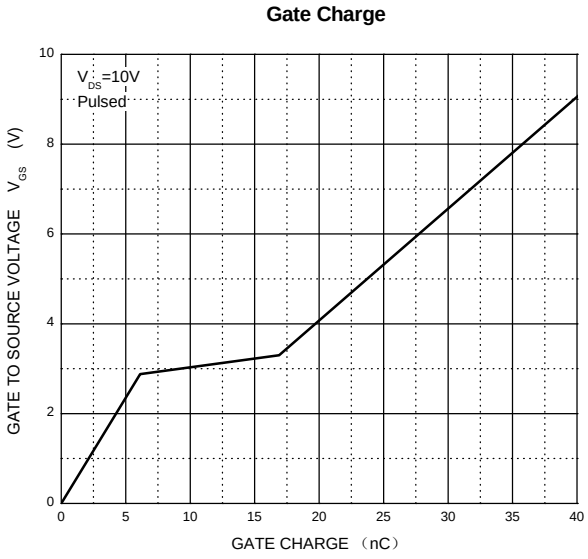


Typical Characteristics

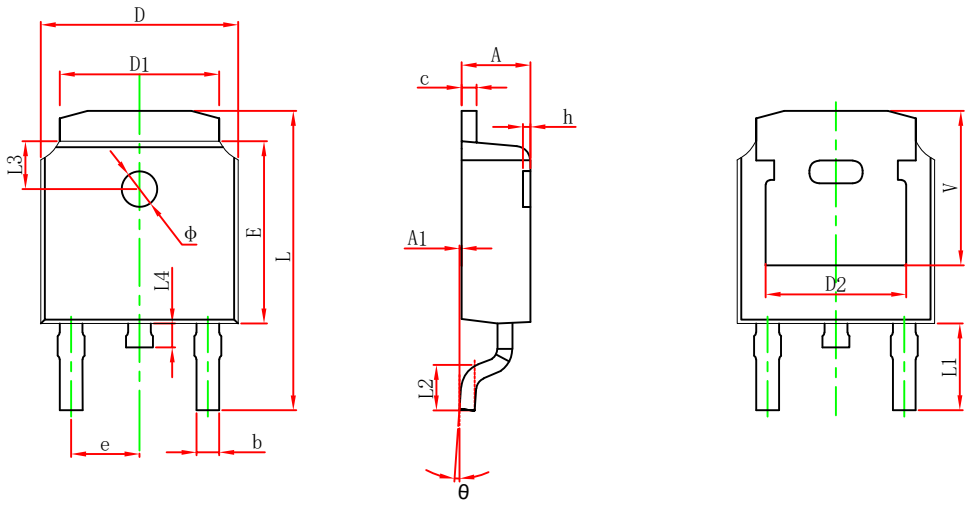






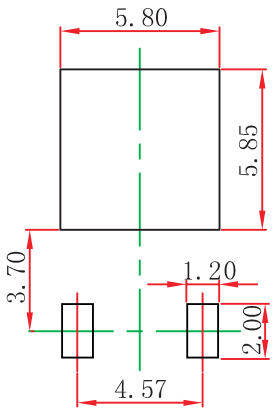


Package Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.700	0.860	0.025	0.030
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.300	0.236	0.244
e	2.000	2.386	0.086	0.094
L	9.712	10.312	0.382	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.900	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	

TO-252-2L Suggest Pad Layout



NOTE:

1. Controlling dimension: in millimeters.
2. General tolerance: ±0.05mm.
3. The pad layout is for reference purposes only.