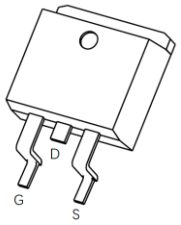
GPT043N10ZBT

100V N-Channel MOSFET

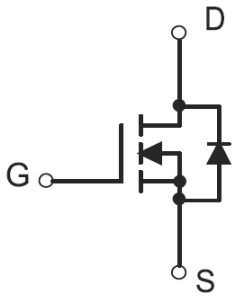
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)}$TYP	I_D
100V	4.0mΩ@10V	130A

TO-263-2L



Schematic diagram



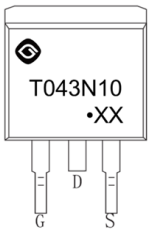
Feature

- High Power and current handing capability
- Load switch
- High density cell design for ultra low $R_{DS(ON)}$
- Lead free product is acquired

Application

- SMPS and general purpose applications
- Hard switched and high frequency circuits

MARKING:



T043N10= Device code

XX= Date Code

ABSOLUTE MAXIMUM RATINGS (T_C=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	130	A
Pulsed Drain Current(1)	I_{DM}	390	A
Avalanche Current*	I_{AS}	23	A
Single Pulse Avalanche Energy*	E_{AS}	130	mJ
Maximum Power Dissipation(4)	P_D	192	W
Thermal Resistance from Junction to Ambient(3)	$R_{\theta JA}$	40	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

*EAS test condition: V_{DD}= 50V, V_{GS}= 10V, L= 0.5 mH, starting Tj= 25℃.

MOSFET ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise noted)

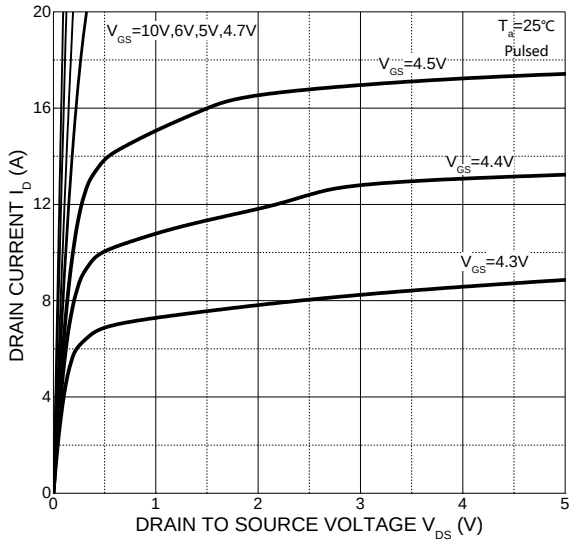
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS}= 0V, I_D= 250μA	100			V
Zero gate voltage drain current	I_{DSS}	V_{DS}= 100V, V_{GS}= 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS}=±20V, V_{DS}= 0V			±100	nA
Gate threshold voltage(1)	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D= 250μA	2.0	3.0	4.0	V
Drain-source on-resistance(1)	$R_{DS(on)}$	V_{GS}= 10V, I_D= 20A		4.0	5.3	mΩ
Dynamic characteristics(2)						
Input capacitance	C_{iss}	V_{DS}= 45V, V_{GS}= 0V, f= 1MHz		4023		pF
Output capacitance	C_{oss}			732		
Reverse transfer capacitance	C_{rss}			40		
Switching Characteristics(2)						
Total gate charge	Q_g	V_{DS}= 50V, V_{GS}= 10V, I_D= 22A		104.3		nC
Gate-source charge	Q_{gs}			20.7		
Gate-drain charge	Q_{gd}			30.1		
Turn-on delay time	$t_{d(on)}$	V_{GS}= 10V, V_{DS}= 50V R_g= 2.2Ω, I_D= 22A		29.3		ns
Turn-on rise time	t_r			7.8		
Turn-off delay time	$t_{d(off)}$			82.1		
Turn-off fall time	t_f			20.4		
Diode Characteristics(1)						
Diode Forward Voltage	V_{SD}	V_{GS}= 0V, I_S= 20A	0.6	0.82	1.1	V

Notes:

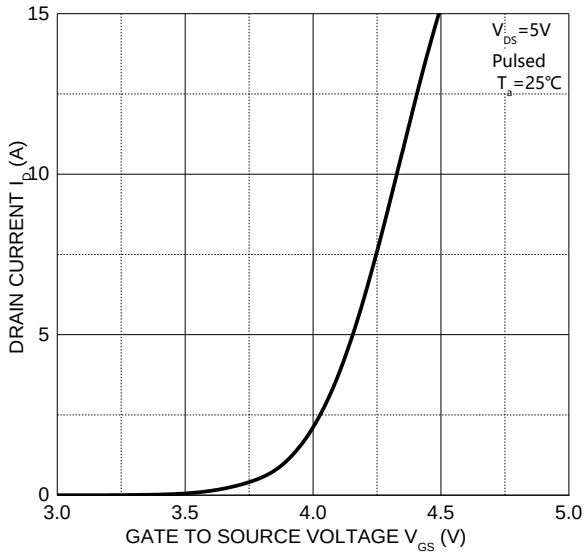
1. Pulse Test: Pulse width≤300μs, duty cycle≤0.5%.
2. Guaranteed by design, not subject to production testing.
3. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 1.5oz. Copper, in a still air environment with T_a=25℃.
4. P_D is based on max. junction temperature, using junction-case thermal resistance.

Typical Electrical and Thermal Characteristics

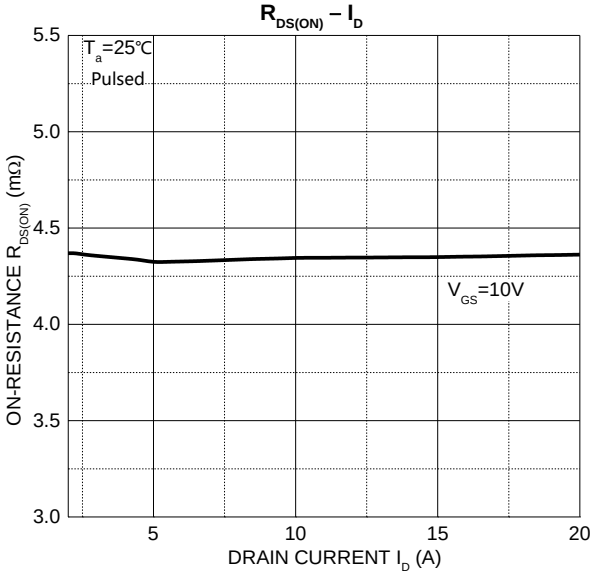
Output Characteristics



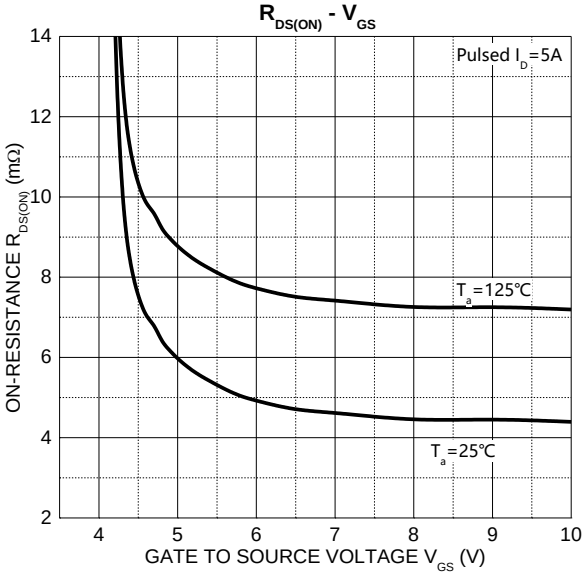
Transfer Characteristics



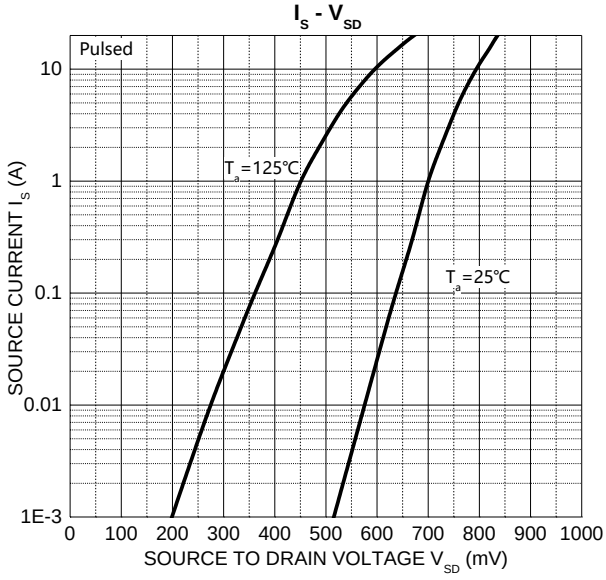
$R_{DS(ON)}$ – I_D



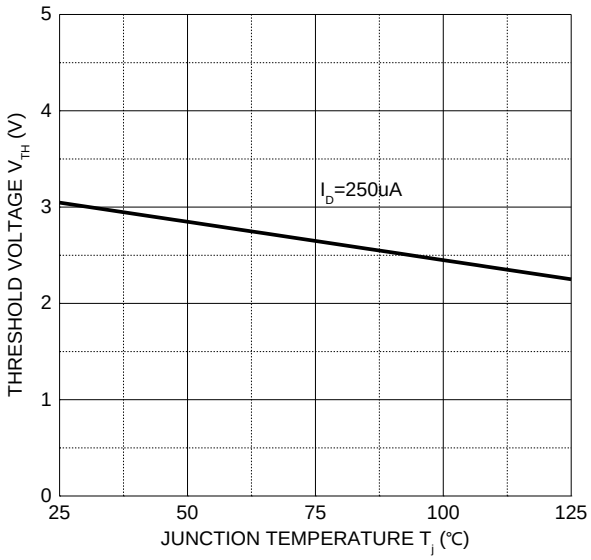
$R_{DS(ON)}$ - V_{GS}



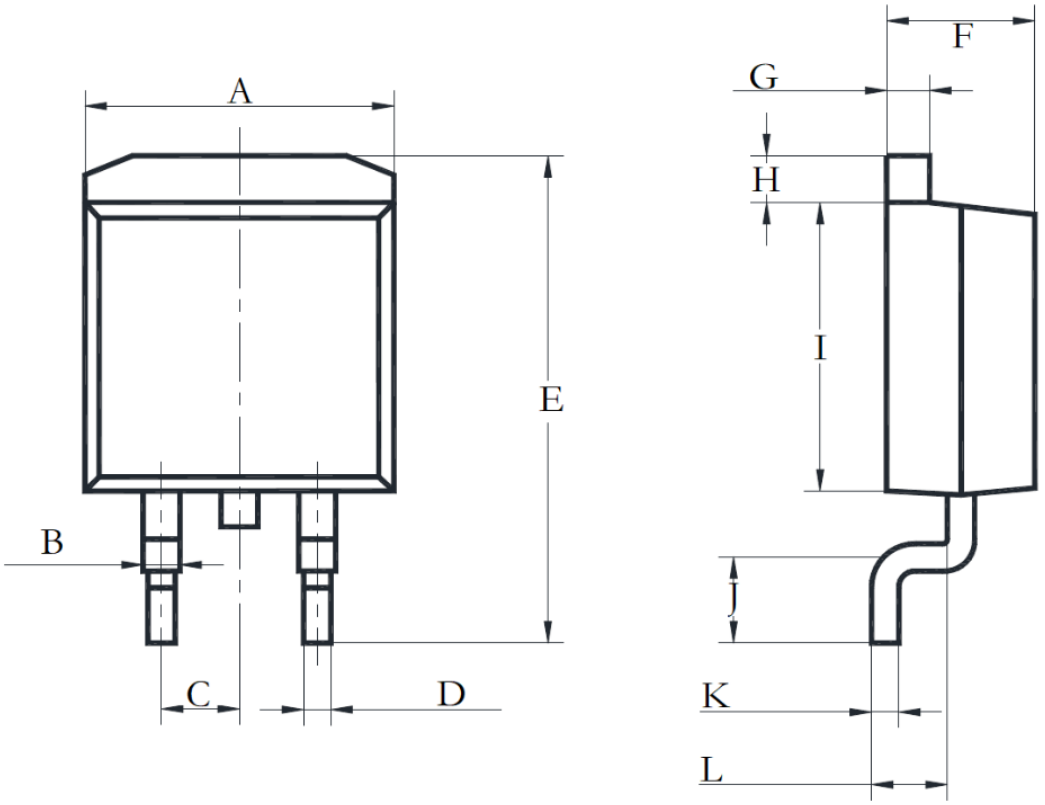
I_S - V_{SD}



Threshold Voltage



TO-263-2L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	9.600	10.500	0.378	0.413
B	1.000	1.400	0.039	0.055
C	2.540REF		0.100REF	
D	0.680	0.940	0.027	0.037
E	14.600	15.880	0.575	0.625
F	4.400	4.800	0.173	0.189
G	1.140	1.400	0.045	0.055
H	1.140	1.400	0.045	0.055
I	8.250	9.650	0.325	0.380
J	2.290	2.790	0.090	0.110
K	0.360	0.650	0.014	0.026
L	2.030	2.790	0.080	0.110