



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	3.7m Ω @10V	134A

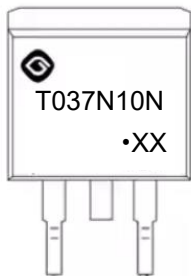
Feature

- Split Gate Trench Technology
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance
- 100% UIS Tested

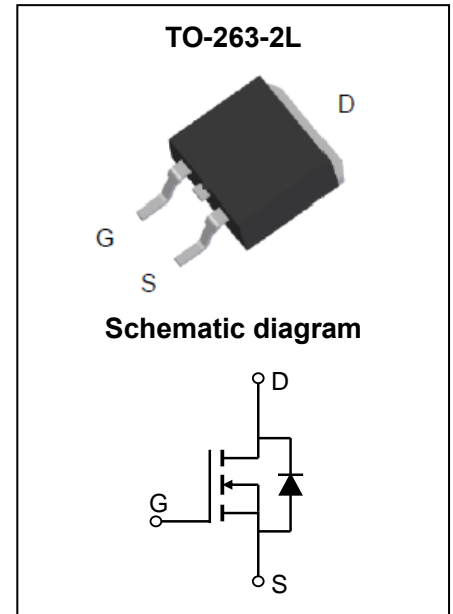
Application

- Power Switching Application

MARKING:



T037N10N = Device Code
XX = Date Code
Solid Dot = Green Indicator



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit	
Drain - Source Voltage	V_{DS}	100	V	
Gate - Source Voltage	V_{GS}	± 20	V	
Continuous Drain Current ¹	$T_C = 25^\circ\text{C}$	I_D	134	A
	$T_C = 100^\circ\text{C}$	I_D	85	A
Pulsed Drain Current ²	I_{DM}	411	A	
Single Pulsed Avalanche Current ³	I_{AS}	45	A	
Single Pulsed Avalanche Energy ³	E_{AS}	304	mJ	
Power Dissipation ⁵	$T_C = 25^\circ\text{C}$	P_D	227	W
Thermal Resistance from Junction to Ambient ⁶	$R_{\theta JA}$	62	$^\circ\text{C}/\text{W}$	
Thermal Resistance from Junction to Case	$R_{\theta JC}$	0.55	$^\circ\text{C}/\text{W}$	
Junction Temperature	T_J	150	$^\circ\text{C}$	
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$	

MOSFET ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off 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} = 80V, V _{GS} = 0V			1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics⁴						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2	2.7	4	V
Drain-source On-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 20A		3.7	4.5	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 50V, V _{GS} = 0V, f = 1MHz		3433		pF
Output Capacitance	C _{oss}			905		
Reverse Transfer Capacitance	C _{rss}			13		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 0.1MHz		2.1		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = 50V, V _{GS} = 10V, I _D = 20A		57		nC
Gate-source Charge	Q _{gs}			11		
Gate-drain Charge	Q _{gd}			16		
Turn-on Delay Time	t _{d(on)}	V _{DD} = 50V, V _{GS} = 10V, R _L = 2.5Ω, R _G = 6Ω		14		ns
Turn-on Rise Time	t _r			34		
Turn-off Delay Time	t _{d(off)}			60		
Turn-off Fall Time	t _f			50		
Source - Drain Diode Characteristics						
Diode Forward Voltage ⁴	V _{SD}	V _{GS} = 0V, I _S = 1A			1.2	V

Notes :

- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.
- 3.EAS condition: V_{DD} = 50V, V_{GS} = 10V, L = 0.3mH, R_G = 25Ω Starting T_J = 25°C.
- 4.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
- 5.The power dissipation P_D is limited by T_{J(MAX)} = 150°C.And device mounted on a large heatsink
- 6.Device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

Typical Characteristics

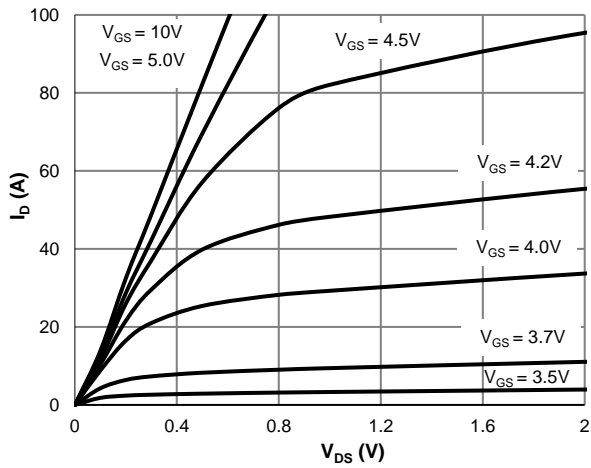


Figure 1: Saturation Characteristics

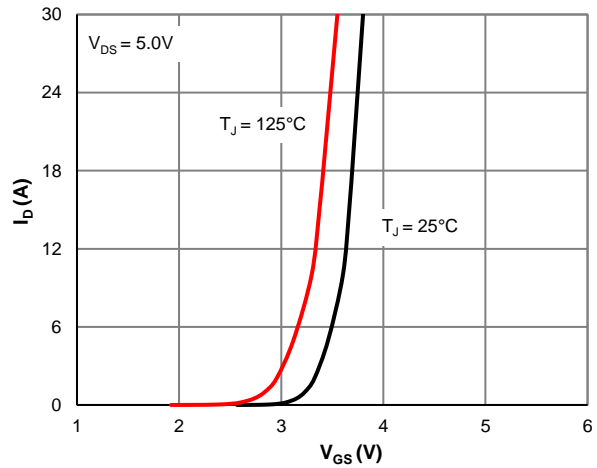


Figure 2: Transfer Characteristics

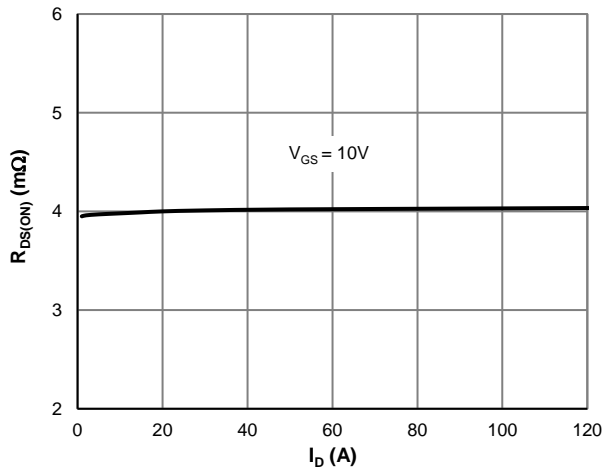


Figure 3: $R_{DS(ON)}$ vs. Drain Current

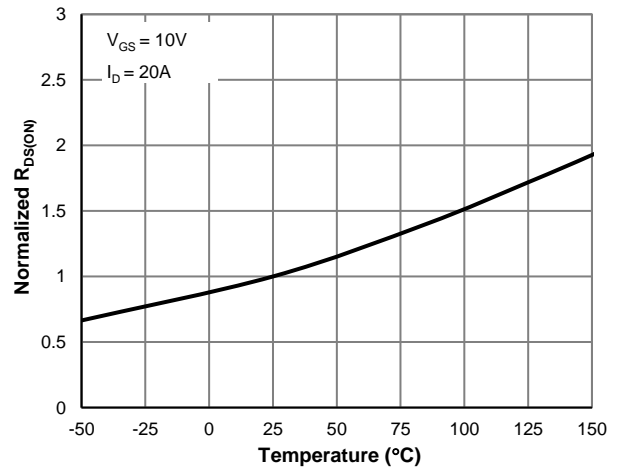


Figure 4: $R_{DS(ON)}$ vs. Junction Temperature

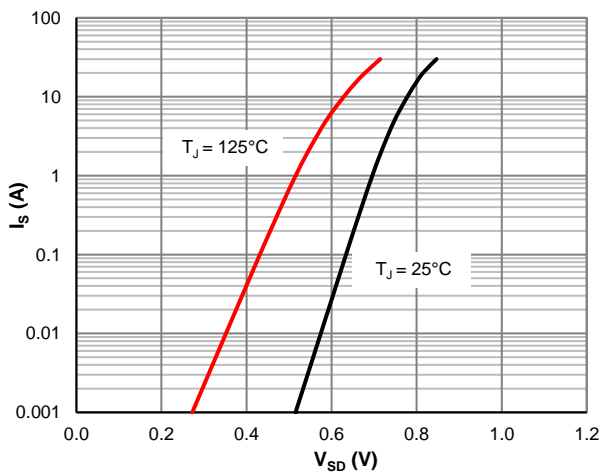


Figure 5: Body-Diode Characteristics

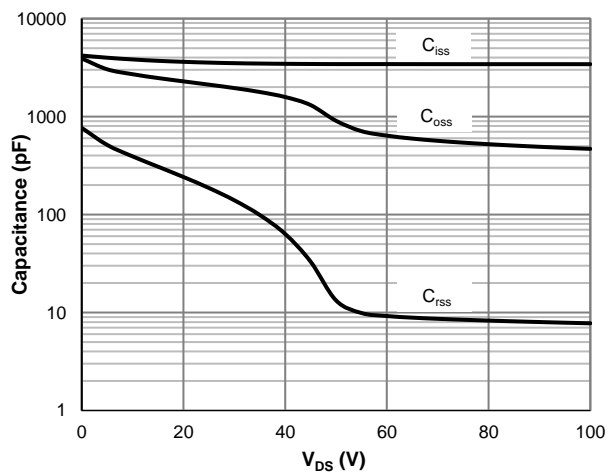


Figure 6: Capacitance Characteristics

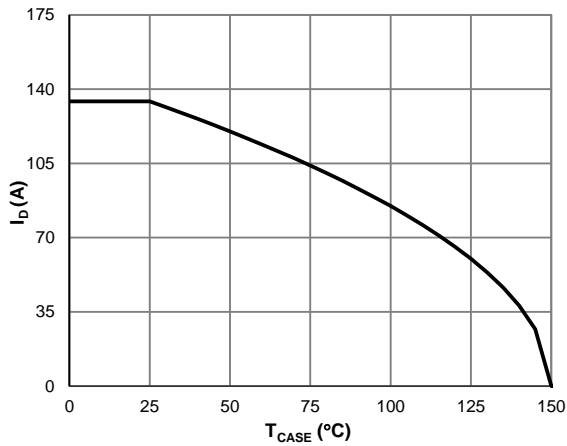


Figure 7: Current De-rating

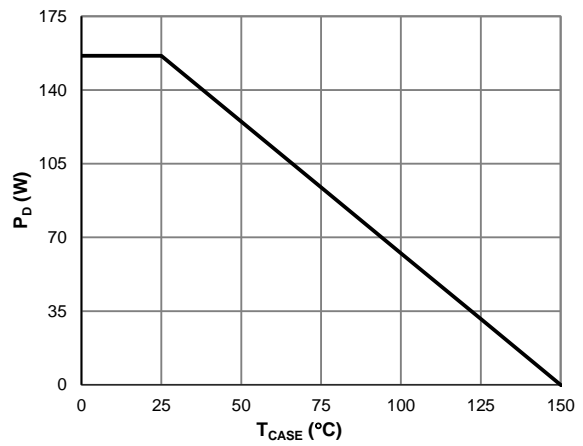


Figure 8: Power De-rating

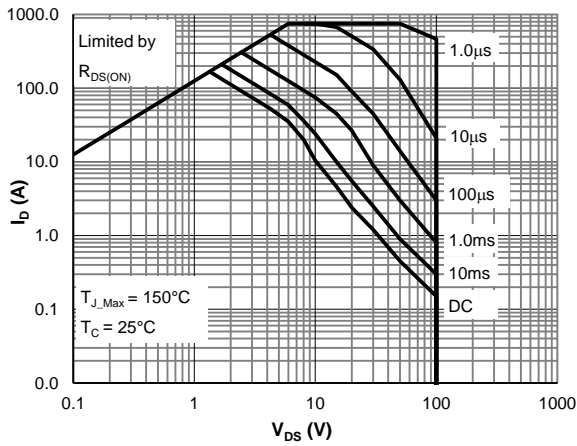


Figure 9: Maximum Safe Operating Area

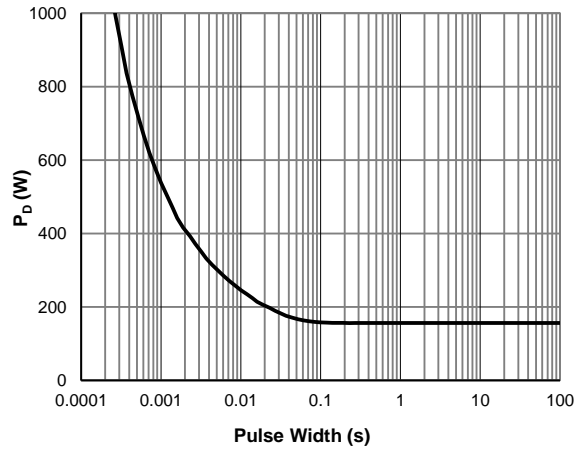


Figure 10: Single Pulse Power Rating, Junction-to-Case

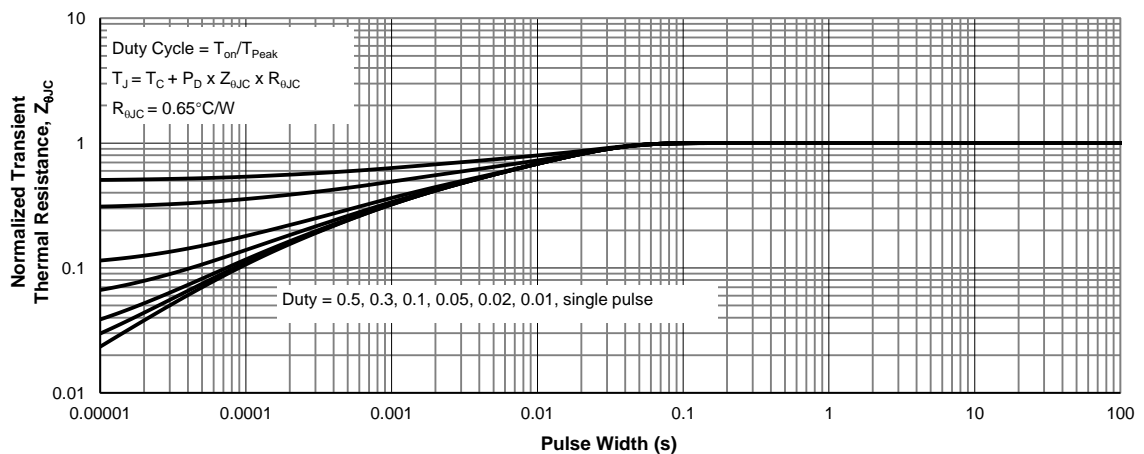
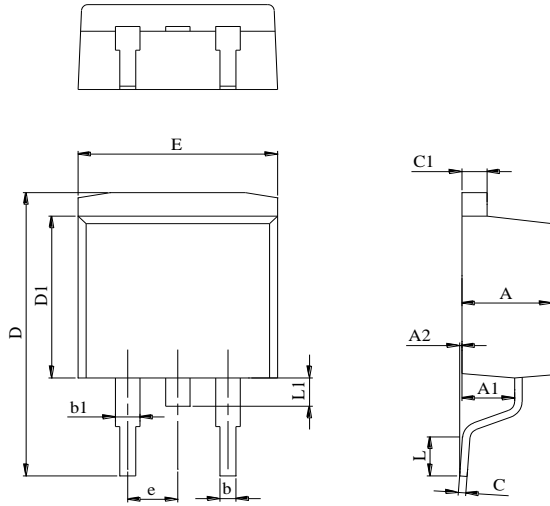


Figure 11: Normalized Maximum Transient Thermal Impedance

TO-263-2L Package Information



DIM.	MILLIMETER		
	MIN.	NOM.	MAX.
A	4.24		4.77
A1	2.30		2.89
A2	0.00	0.10	0.25
b	0.70		0.96
b1	1.17		1.70
C	0.30		0.60
C1	1.15		1.42
D	14.10		15.88
D1	8.50		9.60
E	9.78		10.36
L	1.78		2.79
L1			1.75
e		2.54	