

General Description

The MY60N10S uses advanced Trench technology and designs to provide excellent RDS(ON) with low gate charge. This device is suitable for use in PWM load switching and general purpose applications.

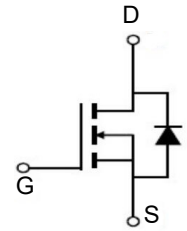
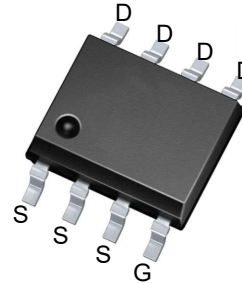


: YUhi fYg

V_{DS}	60	V
I_D	9	A
$T_{FUTOP}(V_{GS}=10V)$	>12	ms
$T_{FUTOP}(V_{GS}=4.5V)$	>14	ms

Application

- Motor / Body Load Control
- Load Switch
- DC-DC converters and Off-line UPS



DUW U[Y A Uf]b[UbX CfXYf]b[-bZfa U]cb

DfcXi Wi-8	DUW	A Uf]b[E lmfD7 GŁ
MY60N10S	ÚÚÚË	N/A	HÉÉÉ

5 Vgc`i hY'AU ja i a 'FU]b[g'fH,1&) °C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V	60	V
Gate-Source Voltage	V _{GS}	±20	V
Drain Current-Continuous	I _D	TA=25°C	9
		TA=70°C	7
Drain Current-Pulsed ^{Note 1}	I _{DM}	32	A
Avalanche Current	I _{AS}	36	A
Avalanche Energy, L=0.1mH	E _{AS}	64	mJ
Maximum Power Dissipation	P _D	TA=25°C	1.5
		TA=70°C	0.9
Storage Temperature Range	T _{STG}	-55 to +150	°C
Operating Junction Temperature Range	T _J	-55 to +150	°C

Thermal Resistance Ratings

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Maximum Junction-to-Ambient	R _{θJA}	Steady State	-	-	85	°C/W
Maximum Junction-to-Case	R _{θJC}	Steady State	-	-	24	°C/W

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

OFF CHARACTERISTICS						
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _{DS} =250μA	60	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =48V, V _{GS} =0V	-	-	1	μA
Gate-Body Leakage	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA

ON CHARACTERISTICS						
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _{DS} =250μA	1.2	-	2.5	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _{DS} =9A	-	10	12	mΩ
Drain-Source On-State Resistance		V _{GS} =4.5V, I _{DS} =6A	-	12	14	

DYNAMIC CHARACTERISTICS						
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, f=1MHz	-	2037	-	pF
Output Capacitance	C _{oss}		-	160	-	
Reverse Transfer Capacitance	C _{rss}		-	78	-	
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz	-	0.6	-	Ω

SWITCHING CHARACTERISTICS						
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Turn-On Delay Time	T _{d(on)}	V _{DD} =15V, I _D =9A, V _{GS} =10V, R _g =6Ω	-	9.3	-	ns
Rise Time	t _r		-	27.4	-	
Turn-Off Delay Time	T _{d(off)}		-	43.9	-	
Fall Time	t _f		-	10.6	-	
Total Gate Charge	Q _g	V _{DS} =30V, I _{DS} =9A, V _{GS} =10V	-	38	-	nC
Gate to Source Gate Charge	Q _{gs}		-	5.7	-	
Gate to Drain "Miller" Charge	Q _{gd}		-	8.5	-	

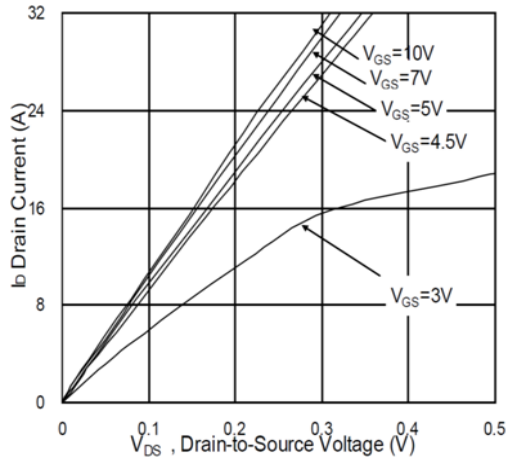
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Maximum Body-Diode Continuous Current	I _S	V _G =V _D =0V, Force Current	-	-	9	A
Pulsed Source Current	I _{SM}	V _G =V _D =0V, Force Current	-	-	32	A
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =1A	-	0.8	1.2	V

Notes:

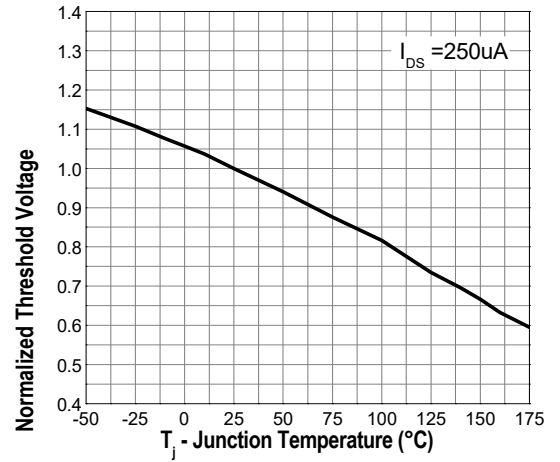
1. Pulse Test: Pulse Width ≤300μs, Duty Cycle ≤2%.
2. R_{θJA} is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. R_{θJC} is guaranteed by design while R_{θCA} is determined by the user's board design. R_{θJA} shown below for single device operation on FR-4 in still air.

Typical Characteristics

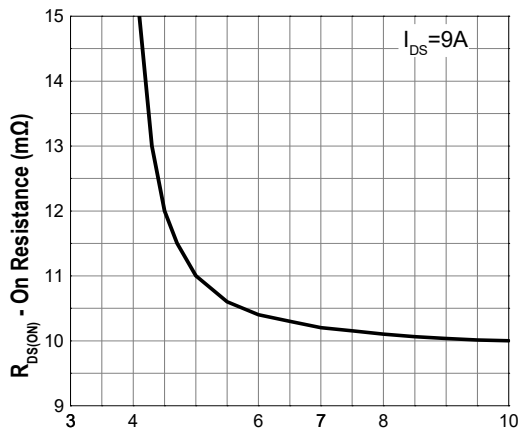
Output Characteristics



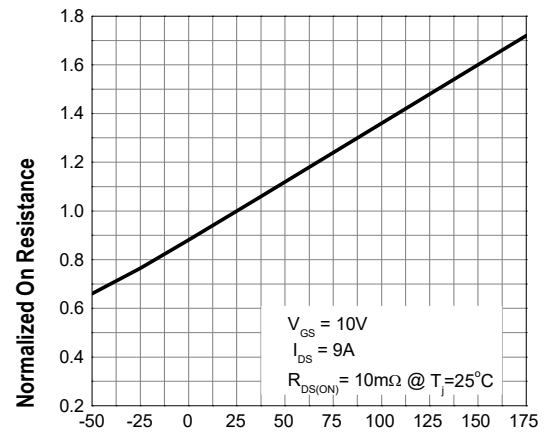
Gate Threshold Voltage



Gate-Source On Resistance

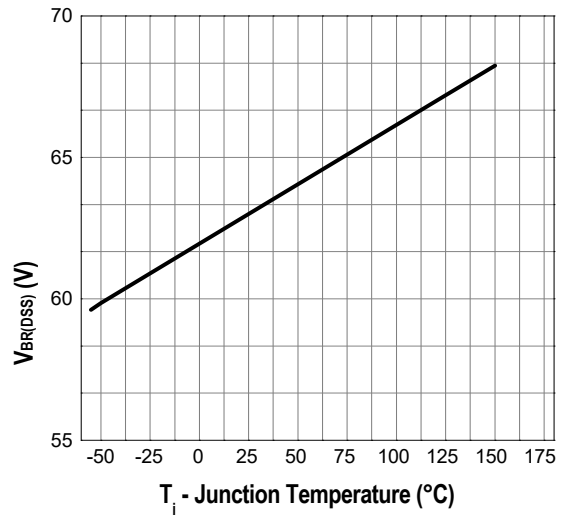
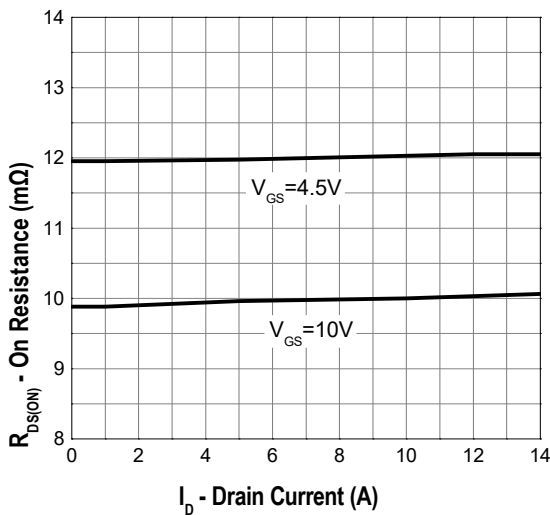


Drain-Source On Resistance

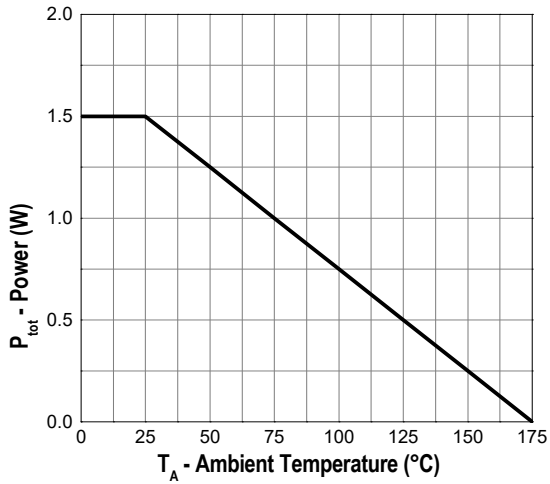


V_{GS} - Gate-Source Voltage (V) Drain-Source On Resistance

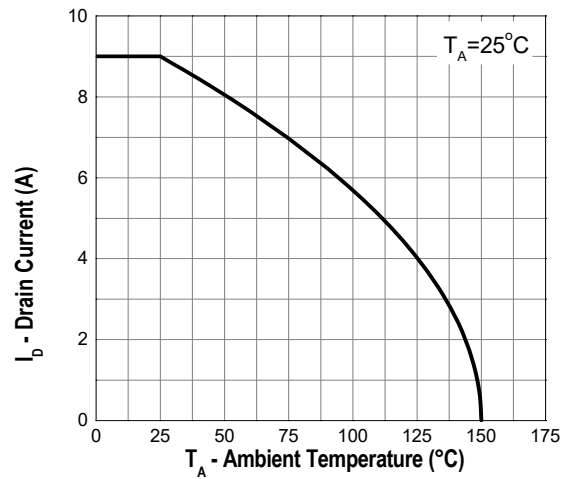
T_j - Junction Temperature (°C) Drain-source Breakdown Voltage



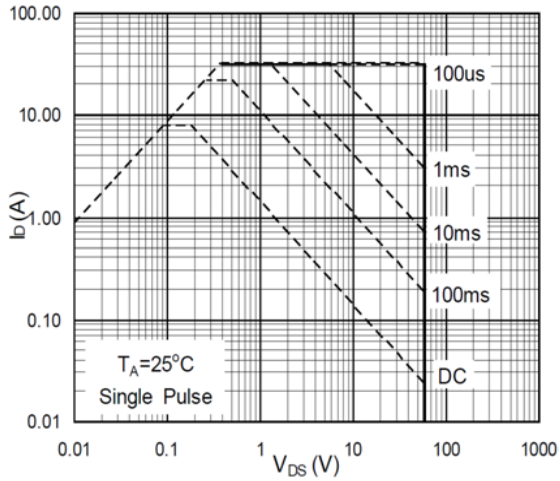
Power Dissipation



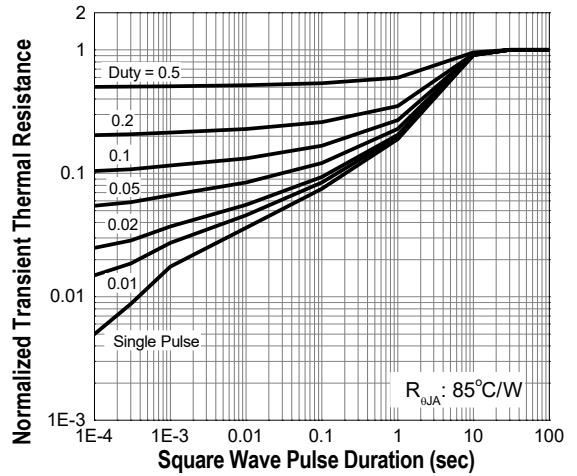
Drain Current



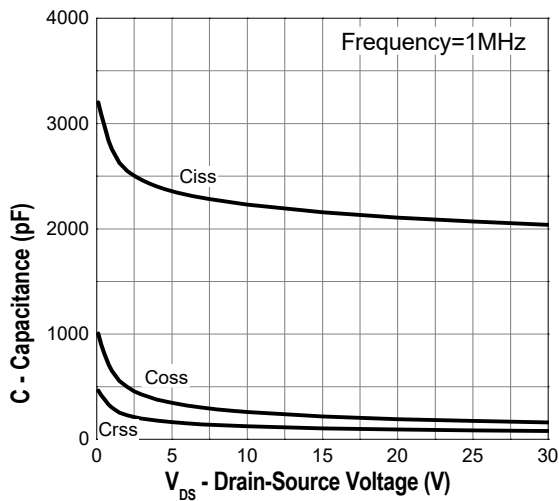
Safe Operation Area



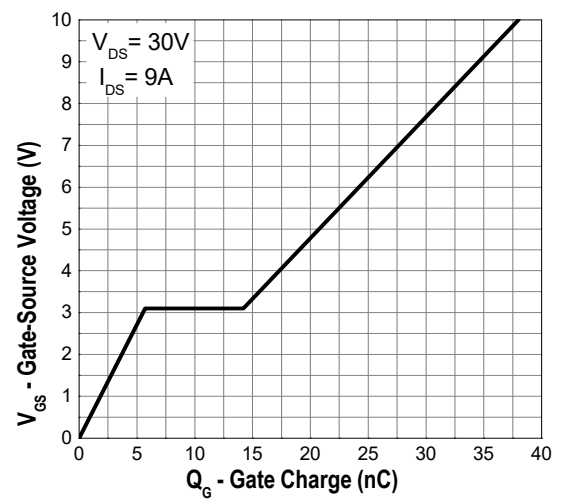
Transient Thermal Impedance



Capacitance



Gate Charge



Package Mechanical Data-SOP-8

