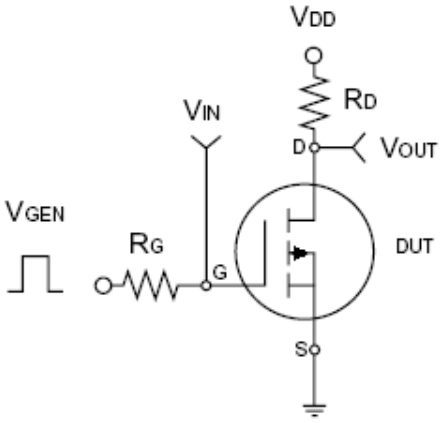
TSM6866SD
20V Dual N-Channel MOSFET

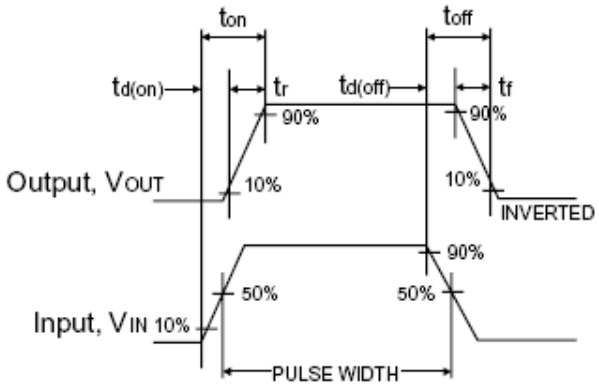
Electrical Specifications (Ta = 25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D = 250uA	BV_{DSS}	20	--	--	V
Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250uA	$V_{GS(TH)}$	0.6	--	--	V
Gate Body Leakage	V_{GS} = ±12V, V_{DS} = 0V	I_{GSS}	--	--	±100	nA
Zero Gate Voltage Drain Current	V_{DS} = 20V, V_{GS} = 0V	I_{DSS}	--	--	1.0	uA
On-State Drain Current	V_{DS} =5V, V_{GS} = 4.5V	$I_{D(ON)}$	30	--	--	A
Drain-Source On-State Resistance	V_{GS} = 4.5V, I_D = 6.0A	$R_{DS(ON)}$	--	21	30	mΩ
	V_{GS} = 2.5V, I_D = 5.2A		--	30	40	
Forward Transconductance	V_{DS} = 10V, I_D = 6A	g_{fs}	--	30	--	S
Diode Forward Voltage	I_S = 1.7A, V_{GS} = 0V	V_{SD}	--	0.7	1.2	V
Dynamic[b]						
Total Gate Charge	V_{DS} = 10V, I_D = 6A, V_{GS} = 4.5V	Q_g	--	5	7	nC
Gate-Source Charge		Q_{gs}	--	1	--	
Gate-Drain Charge		Q_{gd}	--	1.5	--	
Input Capacitance	V_{DS} = 8V, V_{GS} = 0V, f = 1.0MHz	C_{iss}	--	565	--	pF
Output Capacitance		C_{oss}	--	105	--	
Reverse Transfer Capacitance		C_{rss}	--	75	--	
Switching[b,C]						
Turn-On Delay Time	V_{DD} = 10V, R_L = 10Ω, I_D = 1A, V_{GEN} = 4.5V, R_G = 6Ω	$t_{d(on)}$	--	8	20	nS
Turn-On Rise Time		t_r	--	10	20	
Turn-Off Delay Time		$t_{d(off)}$	--	22	45	
Turn-Off Fall Time		t_f	--	6	15	

Notes:
a. pulse test: PW ≤300μS, duty cycle ≤2%
b. For DESIGN AID ONLY, not subject to production testing.
c. Switching time is essentially independent of operating temperature.



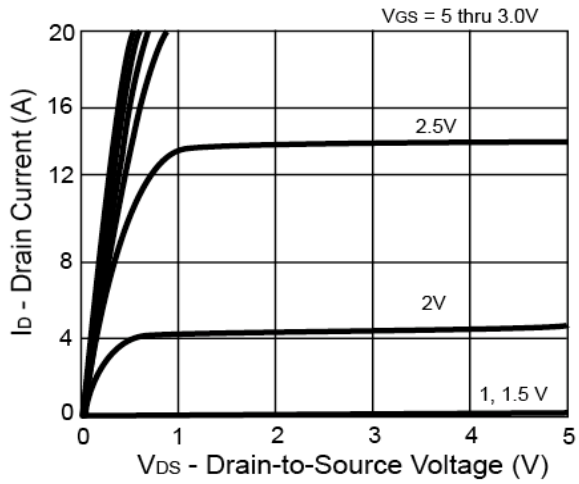
Switching Test Circuit



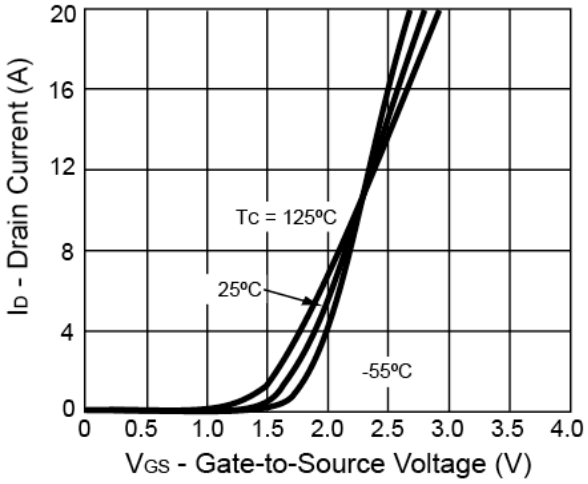
Switchin Waveforms

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

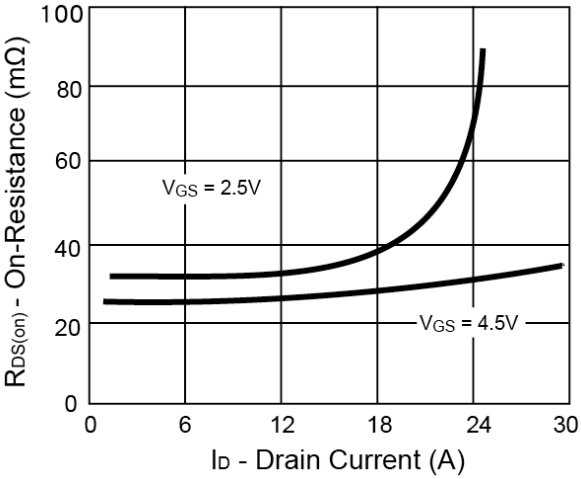
Output Characteristics



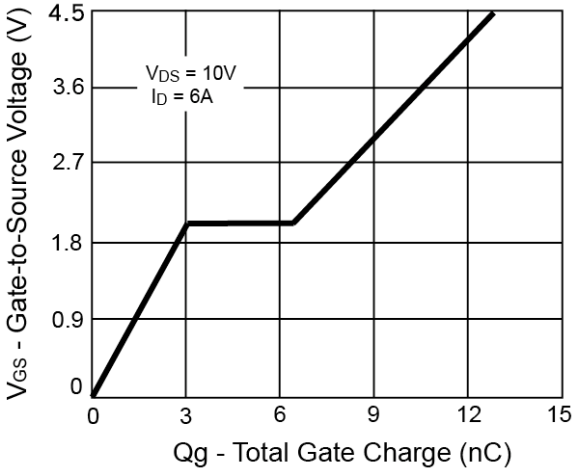
Transfer Characteristics



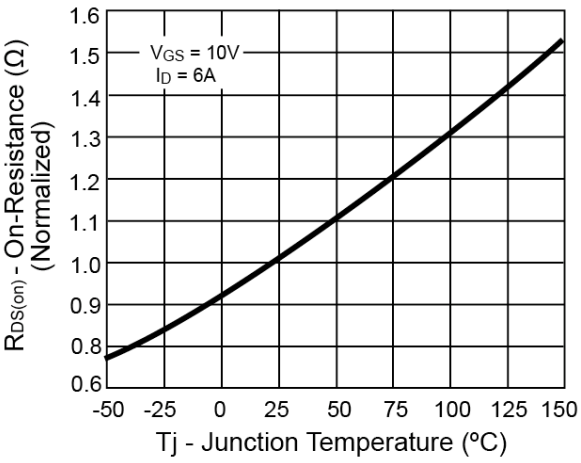
On-Resistance vs. Drain Current



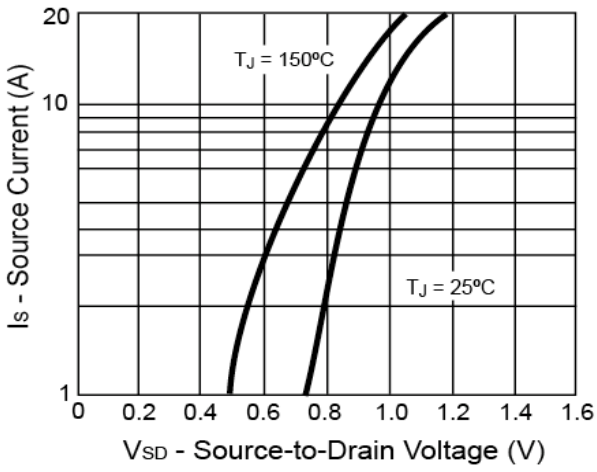
Gate Charge



On-Resistance vs. Junction Temperature

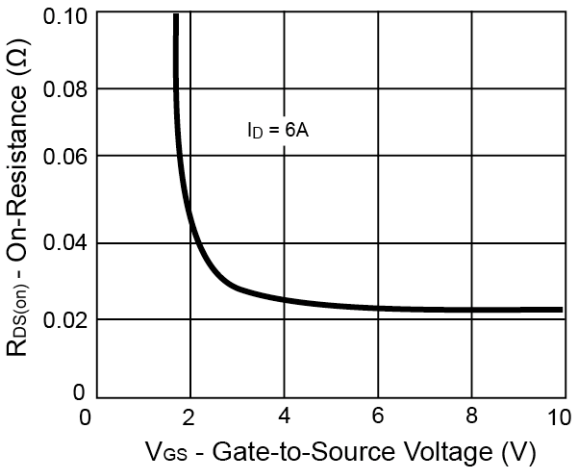


Source-Drain Diode Forward Voltage

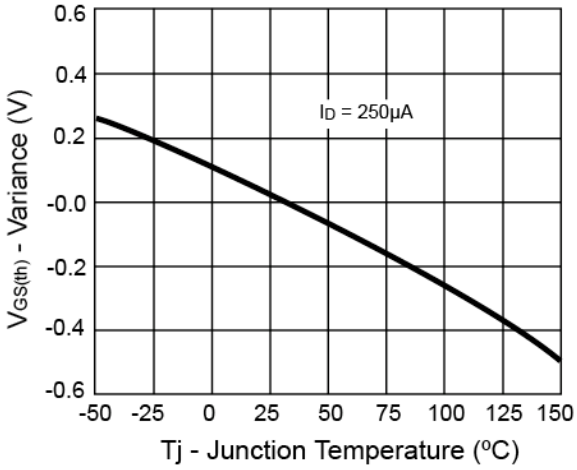


Electrical Characteristics Curve (Ta = 25°C, unless otherwise noted)

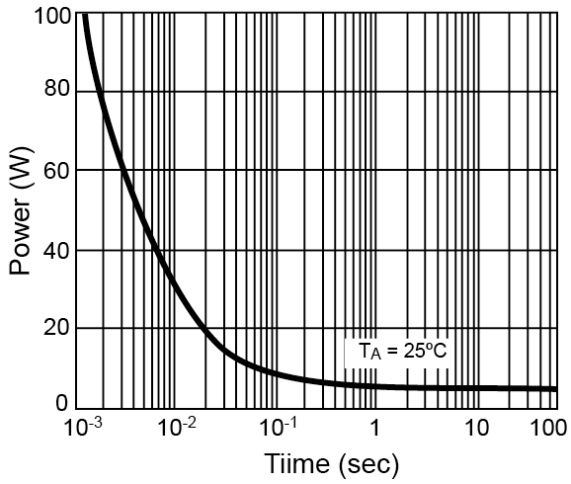
On-Resistance vs. Gate-Source Voltage



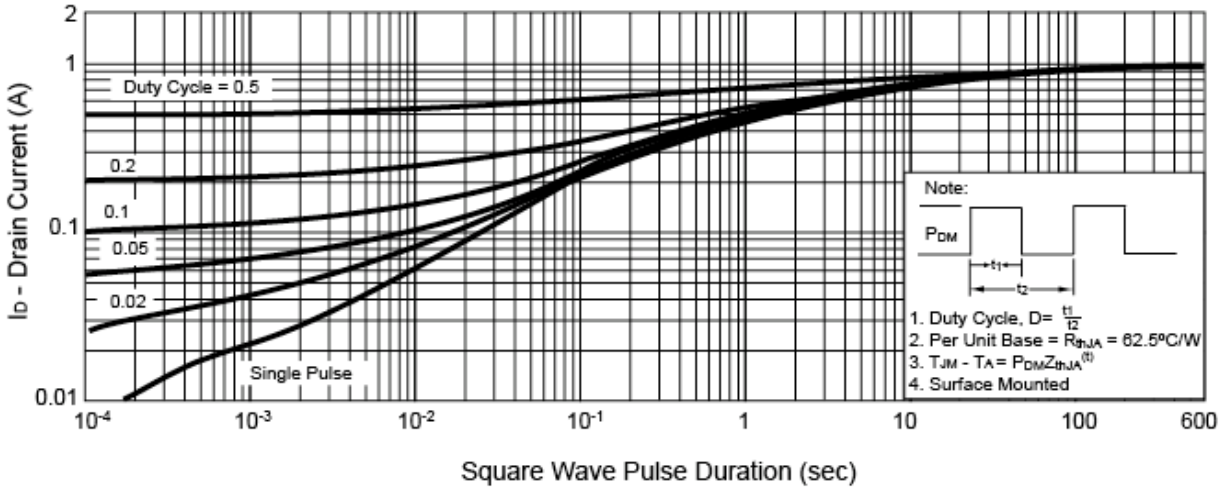
Threshold Voltage



Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Ambient



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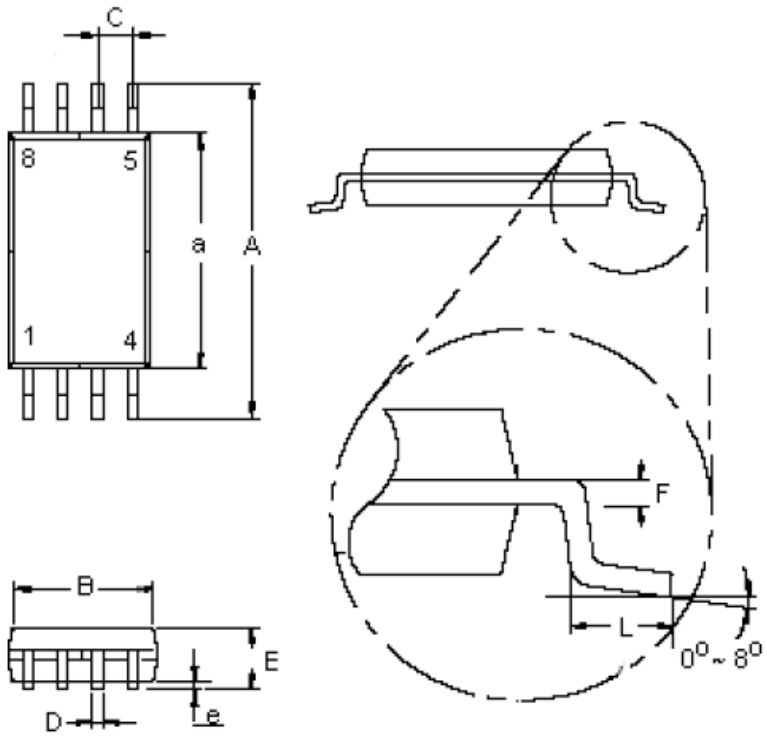
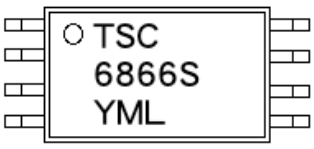
TSSOP-8 Mechanical Drawing



TSSOP-8 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	6.20	6.60	0.244	0.260
a	4.30	4.50	0.170	0.177
B	2.90	3.10	0.114	0.122
C	0.65 (typ)		0.025 (typ)	
D	0.25	0.30	0.010	0.019
E	1.05	1.20	0.041	0.049
e	0.05	0.15	0.002	0.009
F	0.127		0.005	
L	0.50	0.70	0.020	0.028

Marking Diagram



Y = Year Code
M = Month Code
(**A**=Jan, **B**=Feb, **C**=Mar, **D**=Apl, **E**=May, **F**=Jun, **G**=Jul, **H**=Aug, **I**=Sep, **J**=Oct, **K**=Nov, **L**=Dec)
= Month Code for Halogen Free Product
(**O**=Jan, **P**=Feb, **Q**=Mar, **R**=Apl, **S**=May, **T**=Jun, **U**=Jul, **V**=Aug, **W**=Sep, **X**=Oct, **Y**=Nov, **Z**=Dec)
L = Lot Code

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