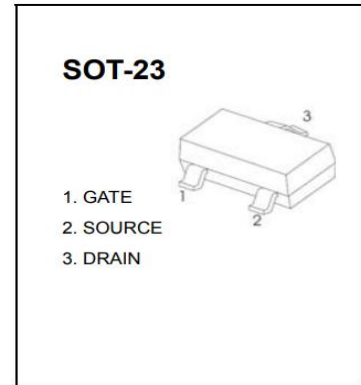


60V N-Channel MOSFET

V_{DS} (V)	$R_{DS(on)}$ (m Ω)	I_D (A)
60	156 @ $V_{GS} = 10V$	3
	192 @ $V_{GS} = 4.5V$	2.1



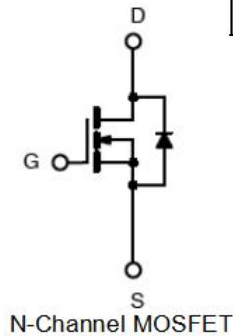
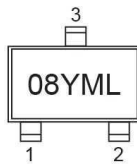
Features

- Advance Trench Process Technology
- High Density Cell Design for Ultra Low On-resistance

Application

- DC-DC Power System
- Load Switch

Marking:



Absolute Maximum Rating ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V _{DS}	60	V
Gate-Source Voltage		V _{GS}	±20	V
Continuous Drain Current		I _D	3	A
Pulsed Drain Current		I _{DM}	6	A
Continuous Source Current (Diode Conduction) ^{a,b}		I _S	3	A
Maximum Power Dissipation	T _A =25°C	P _D	1.25	W
	T _A =75°C		0.8	
Operating Junction Temperature		T _J	+150	°C
Operating Junction and Storage Temperature Range		T _J , T _{STG}	-55 to +150	°C

Thermal Performance

Parameter	Symbol	Limit	Unit
Junction to Case Thermal Resistance	$R_{\theta JC}$	80	$^\circ\text{C/W}$
Junction to Ambient Thermal Resistance (PCB mounted)	$R_{\theta JA}$	150	$^\circ\text{C/W}$

Notes:

- a. Pulse width limited by the Maximum junction temperature
b. Surface Mounted on a 1 in² pad of 2oz Cu, $t \leq 5$ sec.

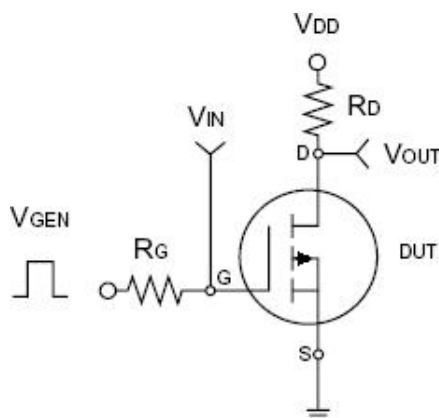
60V N-Channel MOSFET

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

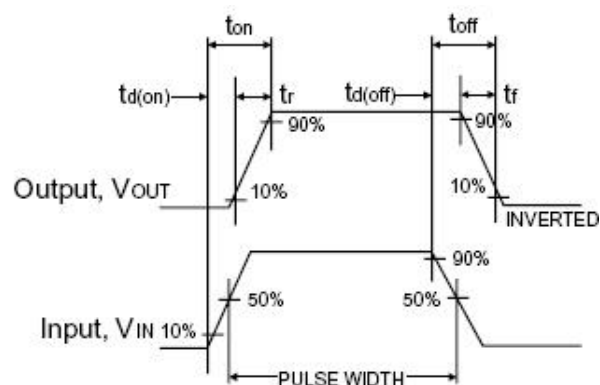
Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	BV_{DSS}	60	--	--	V
Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	$V_{GS(TH)}$	1.2	--	2.5	V
Gate Body Leakage	$V_{GS} = \pm 20V, V_{DS} = 0V$	I_{GSS}	--	--	± 100	nA
Zero Gate Voltage Drain Current	$V_{DS} = 48V, V_{GS} = 0V$	I_{DSS}	--	--	1.0	μA
Drain-Source On-State Resistance	$V_{GS} = 10V, I_D = 3A$	$R_{DS(ON)}$	--	130	156	m Ω
	$V_{GS} = 4.5V, I_D = 2A$		--	160	192	
Diode Forward Voltage	$I_S = 1A, V_{GS} = 0V$	V_{SD}	--	--	-1.2	V
Dynamic ^b						
Total Gate Charge	$V_{DS} = 48V, I_D = 3A, V_{GS} = 4.5V$	Q_g	--	3.99	--	nC
Gate-Source Charge		Q_{gs}	--	1.31	--	
Gate-Drain Charge		Q_{gd}	--	1.78	--	
Input Capacitance	$V_{DS} = 15V, V_{GS} = 0V, f = 1.0MHz$	C_{iss}	--	511	--	pF
Output Capacitance		C_{oss}	--	38	--	
Reverse Transfer Capacitance		C_{rss}	--	25	--	
Switching ^{b,c}						
Turn-On Delay Time	$V_{DD} = 30V, I_D = 3A, V_{GEN} = 10V, R_G = 3.3\Omega$	$t_{d(on)}$	--	5.3	--	nS
Turn-On Rise Time		t_r	--	17.5	--	
Turn-Off Delay Time		$t_{d(off)}$	--	14.2	--	
Turn-Off Fall Time		t_f	--	2.4	--	

Notes:

- pulse test: $PW \leq 300\mu S$, duty cycle $\leq 2\%$
- For DESIGN AID ONLY, not subject to production testing.
- Switching time is essentially independent of operating temperature.



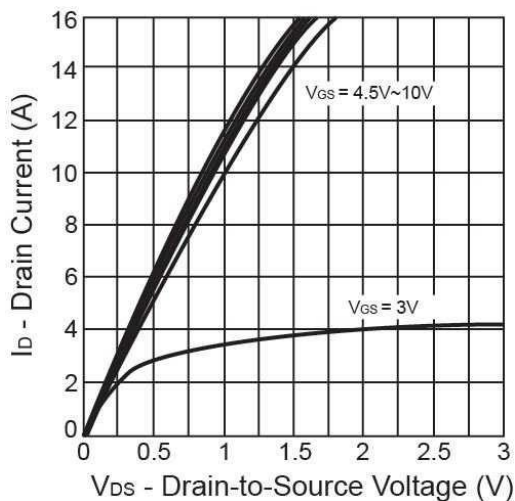
Switching Test Circuit



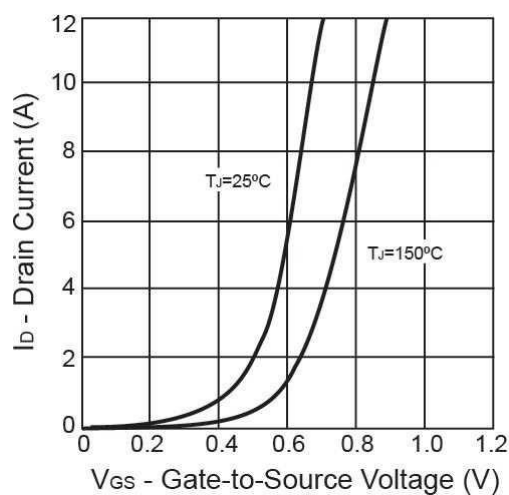
Switchin Waveforms

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

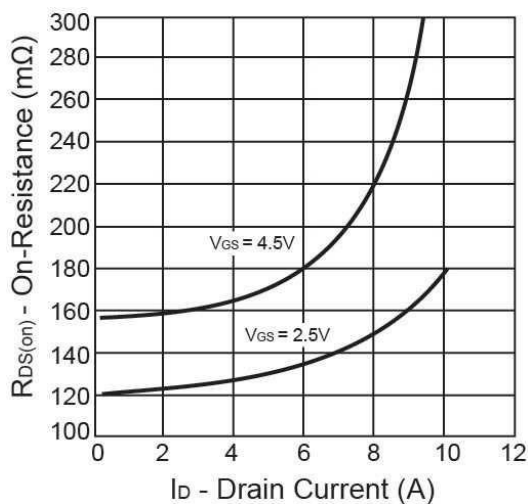
Output Characteristics



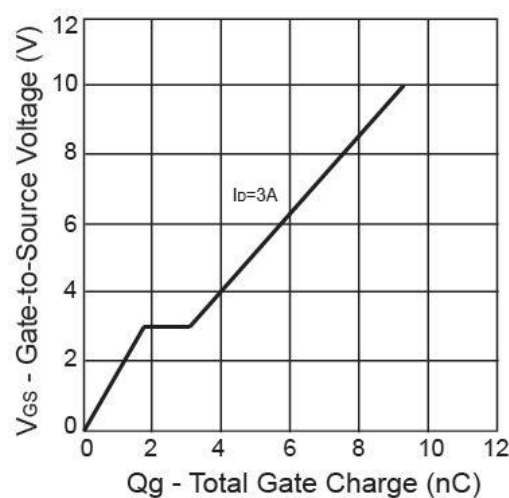
Transfer Characteristics



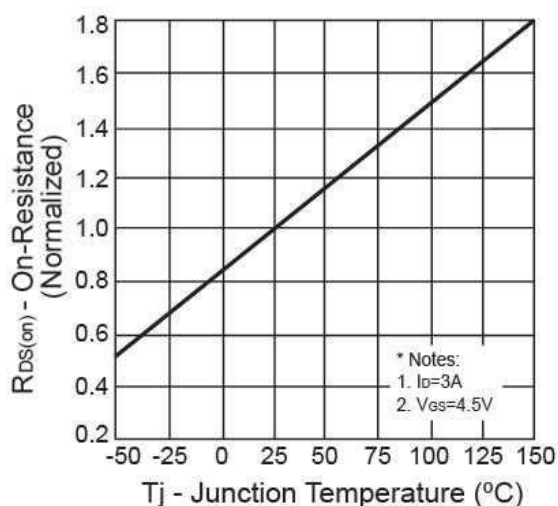
On-Resistance vs. Drain Current



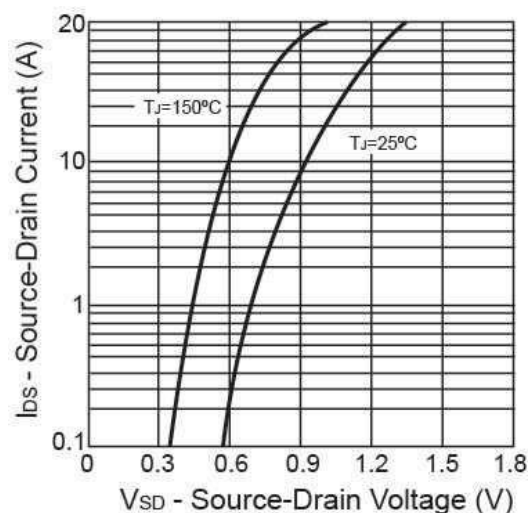
Gate Charge



On-Resistance vs. Junction Temperature

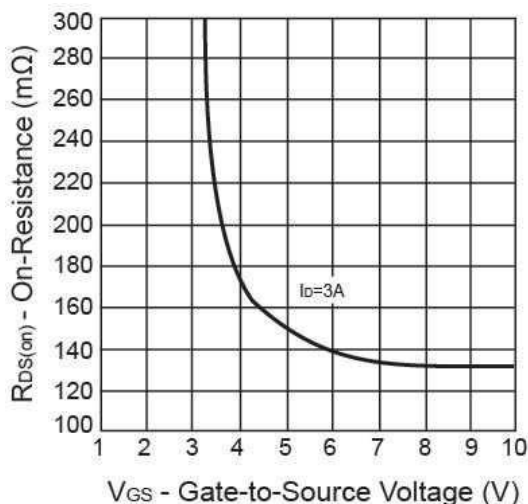


Source-Drain Diode Forward Voltage

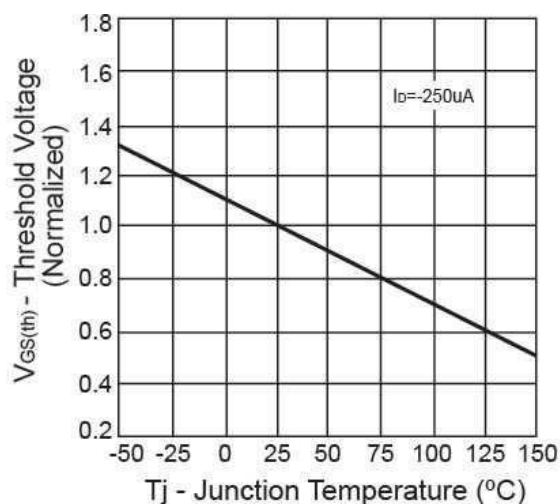


Electrical Characteristics Curve (Ta = 25°C, unless otherwise noted)

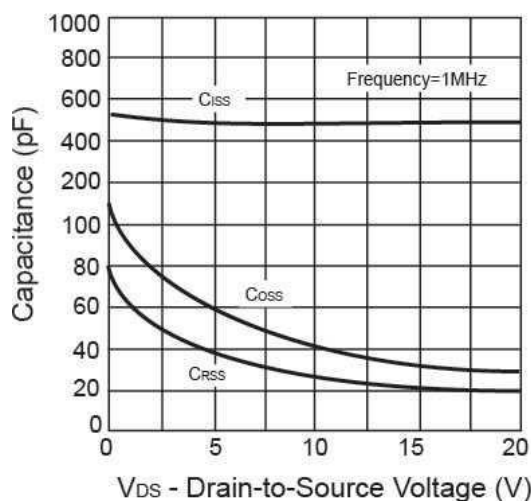
On-Resistance vs. Gate-Source Voltage



Threshold Voltage



Capacitance



Normalized Thermal Transient Impedance, Junction-to-Ambient

