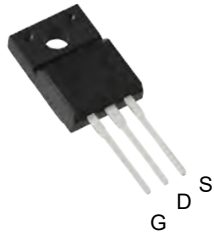
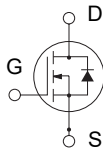


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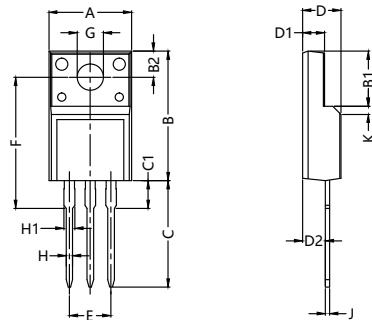
N Channel Enhancement Mode Power MOSFETs



G=Gate
D=Drain
S=Source



Dimensions TO-220F-3L



Dim.	Millimeter		Dim.	Millimeter	
	Min.	Max.		Min.	Max.
A	9.80	10.60	D2	2.30	3.30
B	15.40	16.40	E	5.08BSC	
B1	6.00	7.40	F	14.50	16.00
B2	3.20	3.80	ØG	2.90	3.40
C	12.80	13.50	H	0.60	1.00
C1	3.20	4.00	H1	1.15	1.55
D	4.35	4.95	J	0.35	0.65
D1	2.24	2.84	K	0.00	1.60

Symbol	Test Conditions	Maximum Ratings	Unit
V_{DSS}	$T_J=25^{\circ}\text{C}$ to 150°C	100	V
V_{DGR}	$T_J=25^{\circ}\text{C}$ to 150°C ; $R_{GS}=1\text{M}\Omega$	100	
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	
I_{D25}	$T_C=25^{\circ}\text{C}$	25	A
I_{D100}	$T_C=100^{\circ}\text{C}$	15	
I_{DM}	$T_C=25^{\circ}\text{C}$; pulse width limited by T_{JM}	50	A
I_{AS}	$T_C=25^{\circ}\text{C}$	14.8	A
E_{AS}	$T_C=25^{\circ}\text{C}$	39	mJ
dv/dt	$I_S \leq I_{DM}$; $di/dt \leq 100\text{A}/\mu\text{s}$; $V_{DD} \leq V_{DSS}$ $T_J \leq 150^{\circ}\text{C}$; $R_G=2\Omega$	15	V/ns
P_D	$T_C=25^{\circ}\text{C}$	33	W
T_J		-55...+150	$^{\circ}\text{C}$
T_{JM}		150	
T_{stg}		-55...+150	
T_L	1.6mm(0.062 in.) from case for 10s	300	$^{\circ}\text{C}$
V_{ISO}	50Hz, AC, 60 S, Terminals to Backside	>2500	VAC
M_d	Mounting torque	1.13/10	Nm/lb.in.
Weight	typical	2	g

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N Channel Enhancement Mode Power MOSFETs

(T_J=25°C, unless otherwise specified)

Symbol	Test Conditions	Characteristic Values			Unit
		min.	typ.	max.	
V _{DSS}	V _{GS} =0V; I _D =250μA	100			V
V _{GS(th)}	V _{DS} =V _{GS} ; I _D =0.25mA	2		4	V
I _{GSS}	V _{GS} =±20V _{DC} ; V _{DS} =0			±100	nA
I _{DSS}	V _{DS} =0.8V _{DSS} ; T _J =25°C			1	μA
	V _{GS} =0V; T _J =125°C			100	μA

(T_J=25°C, unless otherwise specified)

Symbol	Test Conditions	Characteristic Values			Unit
		min.	typ.	max.	
R _{DS(on)}	V _{GS} =10V; I _D =0.5I _{D25} Pulse test, t≤300μs, duty cycle≤2%		31	39	mΩ
g _{ts}	V _{DS} =10V; I _D =0.5I _{D25} ; pulse test	25	50		S
C _{ies} C _{oes} C _{res}	V _{GS} =0V; V _{DS} =10V; f=1MHz		1582 191 135		pF
Q _{g(on)} Q _{gs} Q _{gd}	V _{GS} =10V; V _{DS} =0.5V _{DSS} ; I _D =0.5I _{D25}		34 7.1 13		nC
t _{d(on)} t _r t _{d(off)} t _f	V _{GS} =10V; V _{DS} =0.5V _{DSS} ; I _D =0.5I _{D25} R _G =2Ω (External)		25 13 37 8.1		ns ns ns ns
R _{thJC}				4.79	K/W
R _{thJA}				62.0	K/W

Source-Drain Diode

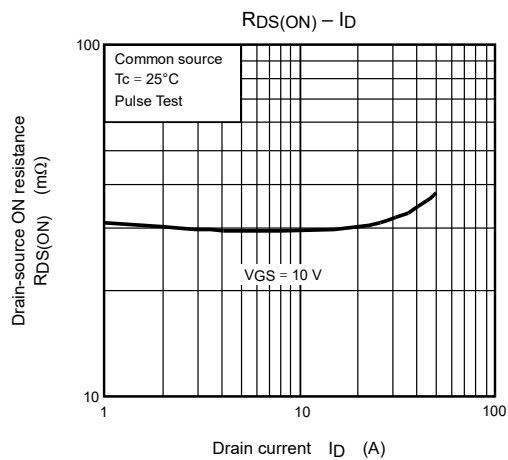
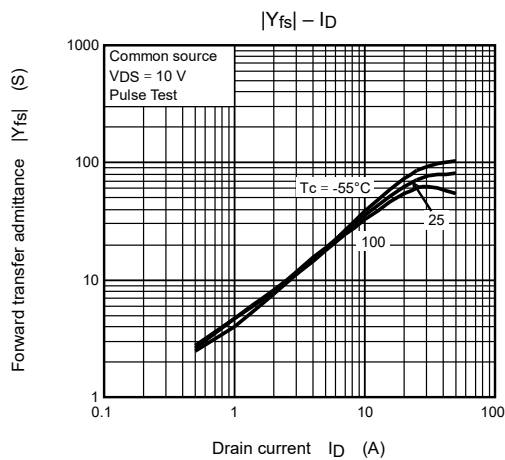
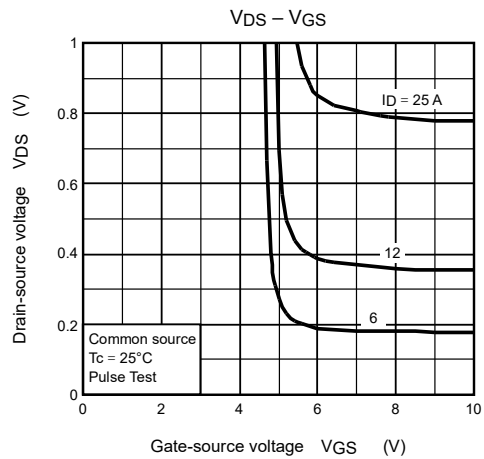
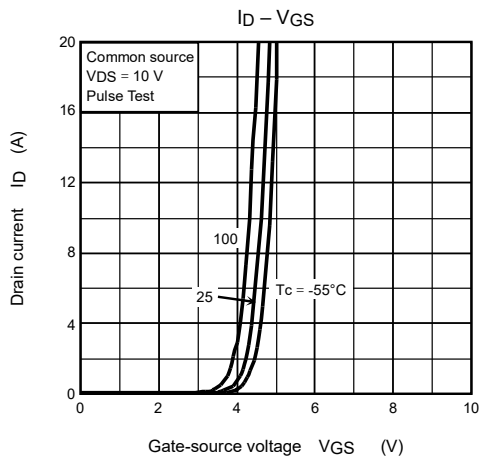
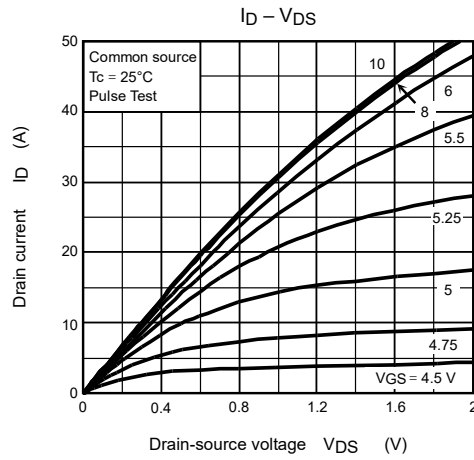
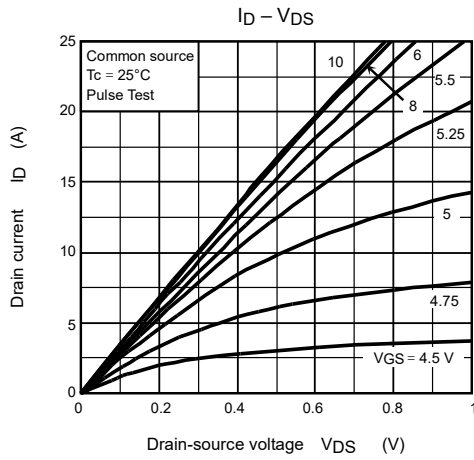
(T_J=25°C, unless otherwise specified)

Symbol	Test Conditions	Characteristic Values			Unit
		min.	typ.	max.	
I _S	V _{GS} =0V			25	A
I _{SM}	Repetitive; pulse width limited by T _{JM}			50	A
V _{SD}	I _F =I _S ; V _{GS} =0V; Pulse test, t≤300μs, duty cycle d≤2%			1.4	V
t _{rr}	I _F =I _S ; T _J =25°C		57		ns
Q _{rr}	-di/dt=50A/μs; T _J =25°C V _{GS} =0V		60		nC
I _{RM}	T _J =25°C		25		A

Sirectifier®

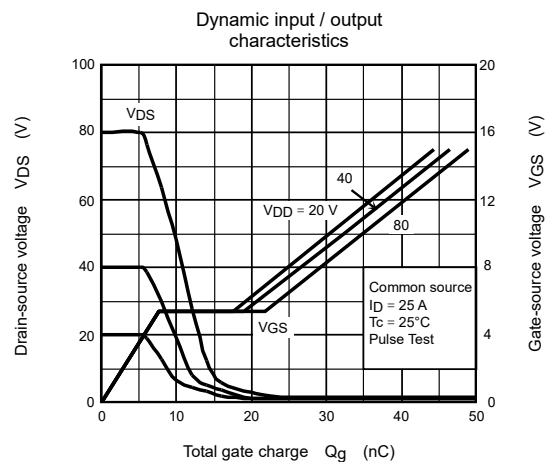
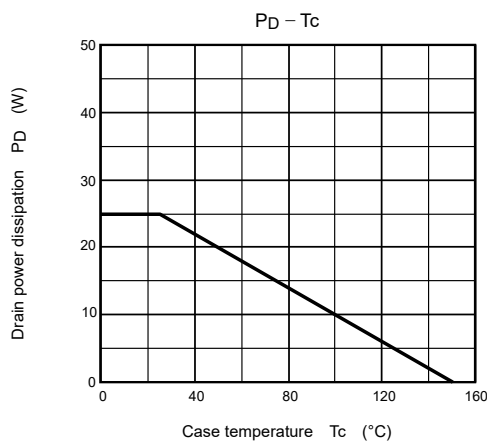
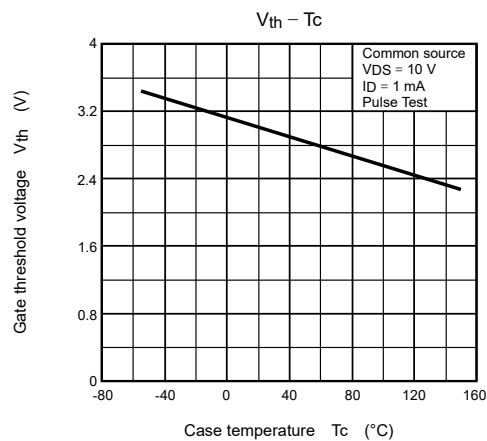
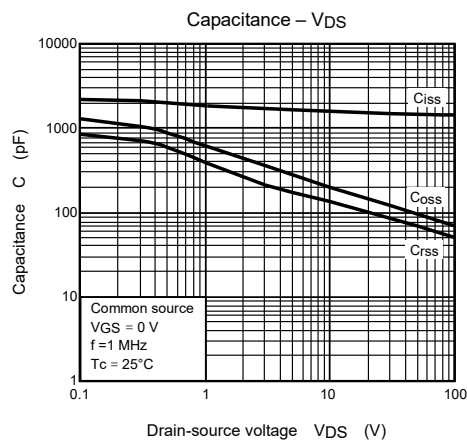
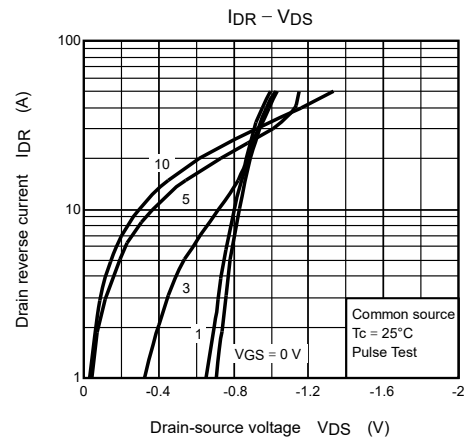
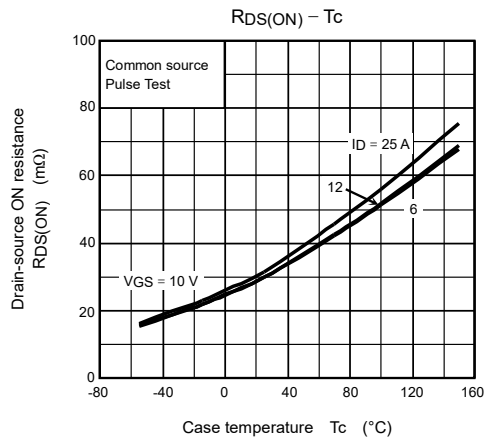
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N Channel Enhancement Mode Power MOSFETs



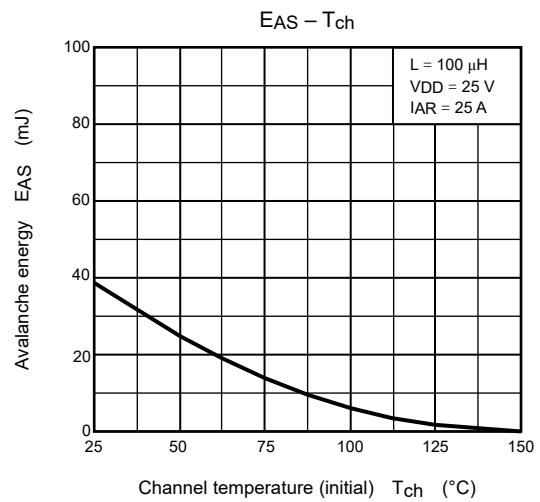
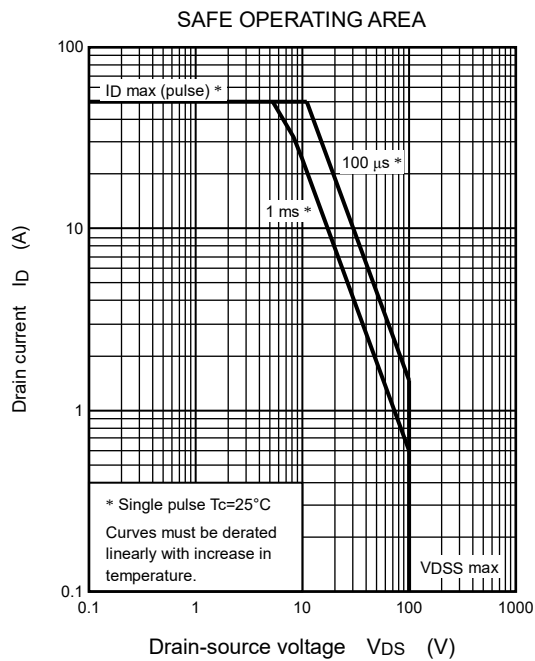
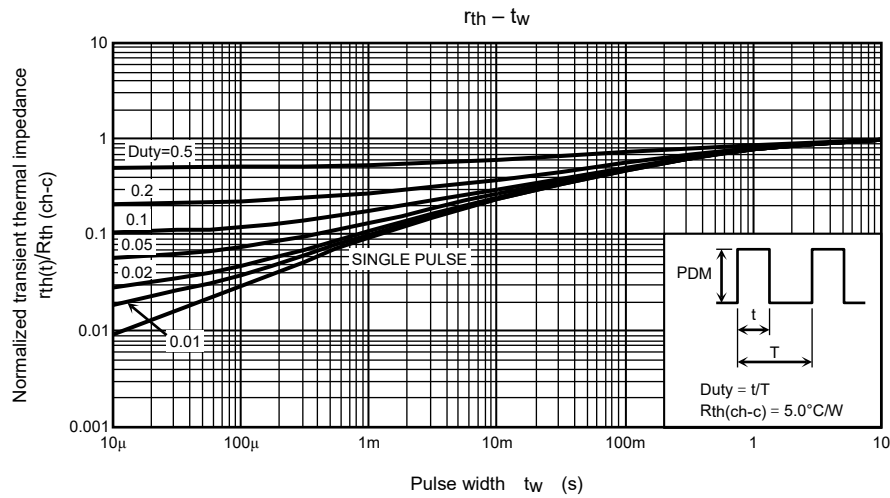
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N Channel Enhancement Mode Power MOSFETs



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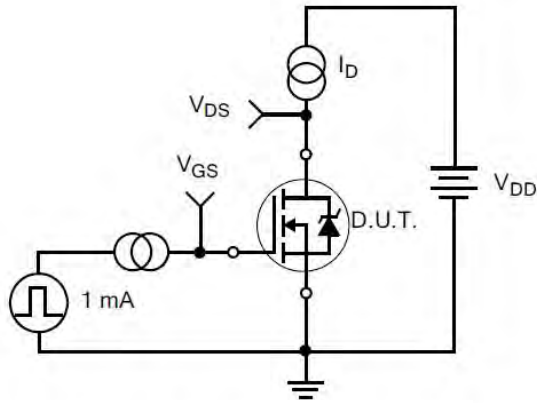
N Channel Enhancement Mode Power MOSFETs



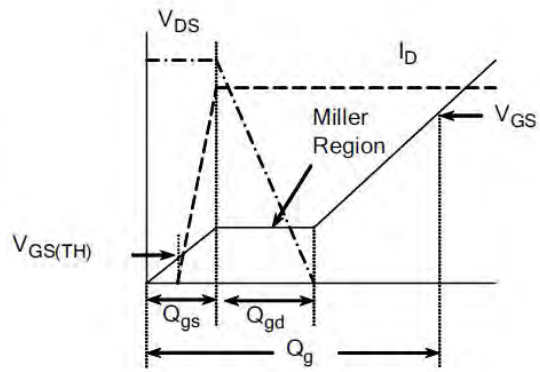
SMOS25N10A1

N Channel Enhancement Mode Power MOSFETs

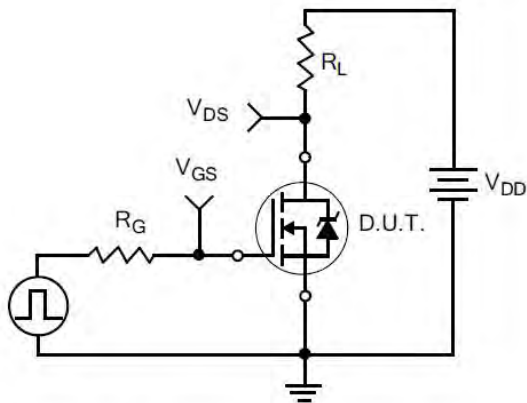
Test Circuit and Waveform



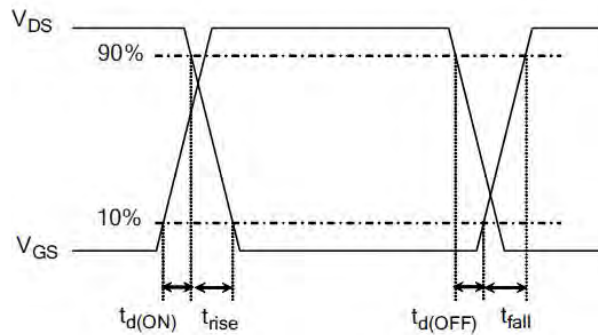
Gate Charge Test Circuit



Gate Charge Waveforms



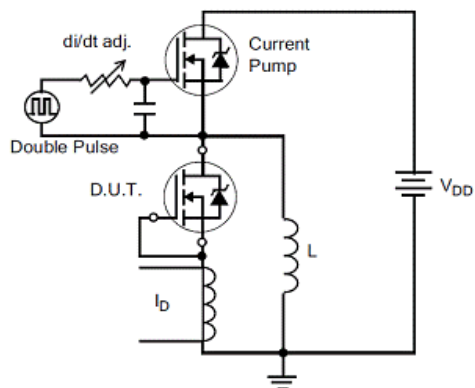
Resistive Switching Test Circuit



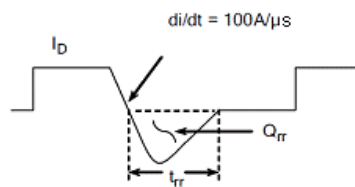
Resistive Switching Waveforms

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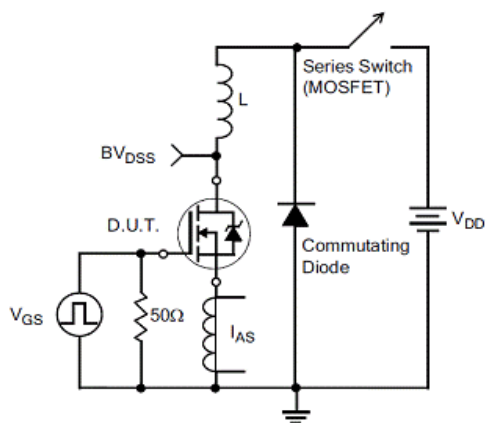
N Channel Enhancement Mode Power MOSFETs



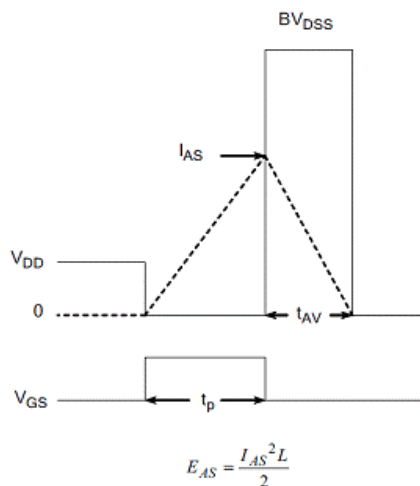
Diode Reverse Recovery Test Circuit



Diode Reverse Recovery Waveform

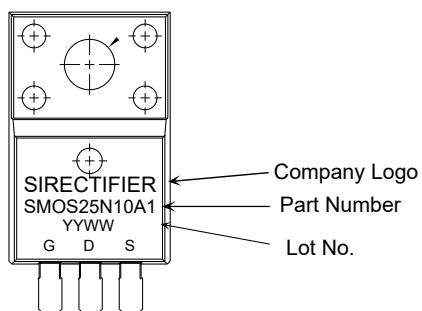


Unclamped Inductive Switching Test Circuit



Unclamped Inductive Switching Waveform

Marking



Ordering Information

Part Number	Package	Shipping	Marking Code
SMOS25N10A1	TO-220F-3L	50pcs / Tube	SMOS25N10A1