

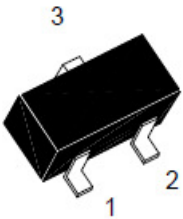
P-Channel Enhancement-Mode MOSFET (-30V, -4.3A)



PRODUCT SUMMARY		
V _{DSS}	I _D	R _{DS(on)} (m-ohm) Max
-30V	-4.3A	60 @ V _{GS} = -10 V, I _D = -4.3A
		78 @ V _{GS} = -4.5V, I _D = -3.0A

◆ Features

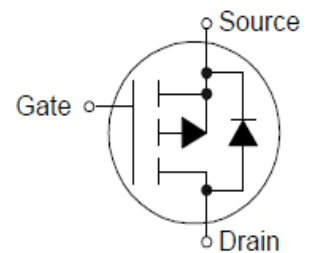
1. Super high dense cell trench design for low R_{DS(on)}.
2. Rugged and reliable.
3. SOT-23 package
4. RoHS Compliant.



SM3407 Pin Assignment & Symbol

3-Lead Plastic SOT-23

Pin 1: Gate 2: Source 3: Drain



◆ Ordering Information

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
SM3407SRL	SM3407SRG	SOT-23	G	S	D	Tape Reel
SM3407LRL	SM3407LRG	SOT-23-3L	G	S	D	Tape Reel

SM3407X X X	
(1) Package Type	↑
(2) Packing Type	↑
(3) Lead Free	↑

(1) S: SOT-23; L: SOT-23-3L
(2) R: Tape Reel
(3) G: Halogen Free; L: Lead Free



◆ Absolute Maximum Ratings (T_A=25°C, unless otherwise noted)

Symbol	Parameter	Ratings	Units
V _{DS}	Drain-Source Voltage	-30	V
V _{GS}	Gate-Source Voltage	±20	V
I _D	Drain Current (Continuous) ^a	-4.3	A
I _{DM}	Drain Current (Pulsed) ^b	-20	A
P _D	Total Power Dissipation	@TA=25°C	1.4
		@TA=70°C	0.9
T _J , T _{stg}	Operating Junction and Storage Temperature Range	-55 to +150	°C
R _{θJA}	Thermal Resistance Junction to Ambient (PCB mounted) ^c	125	°C/W

a:Fused current that based on wire numbers and diameter

b:Repetitive Rating: Pulse width limited by the maximum junction temperature

c:1-in² 2oz Cu PCB board

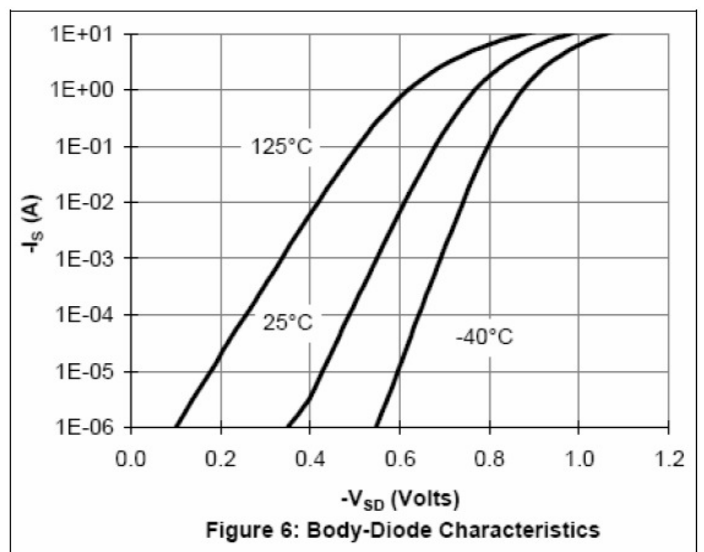
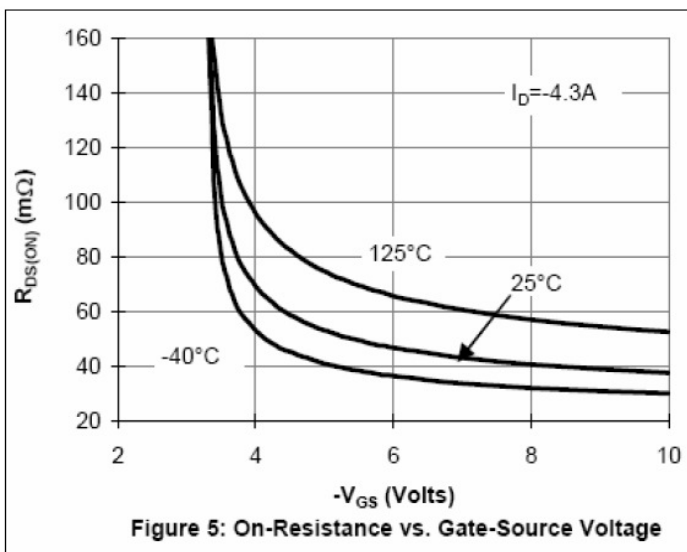
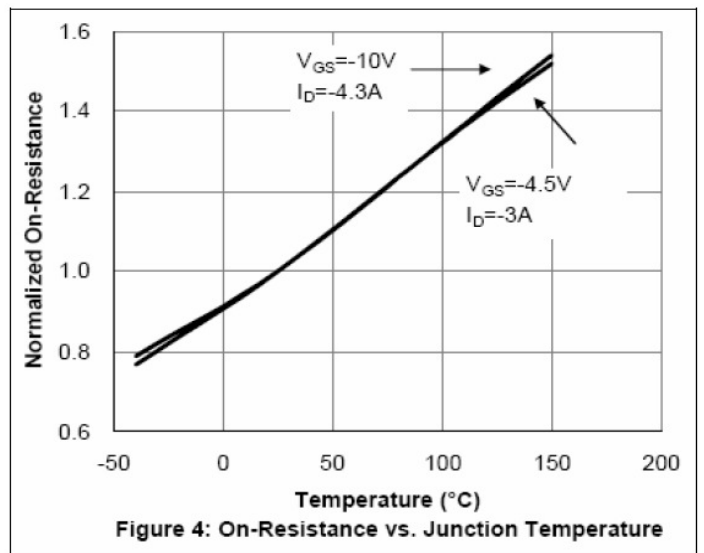
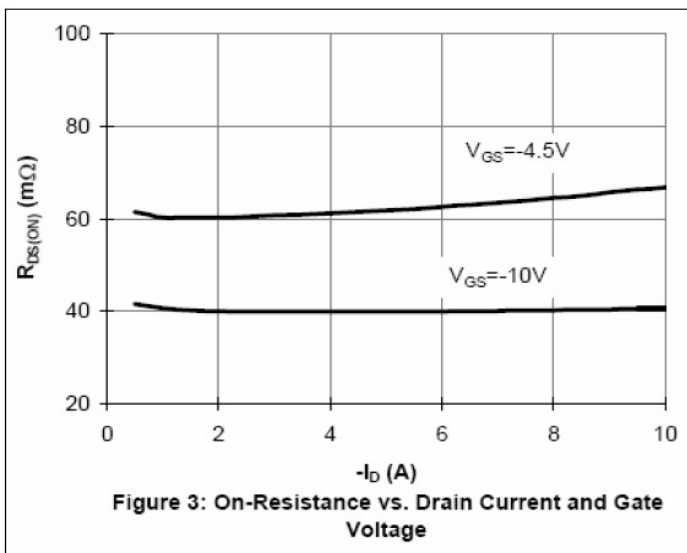
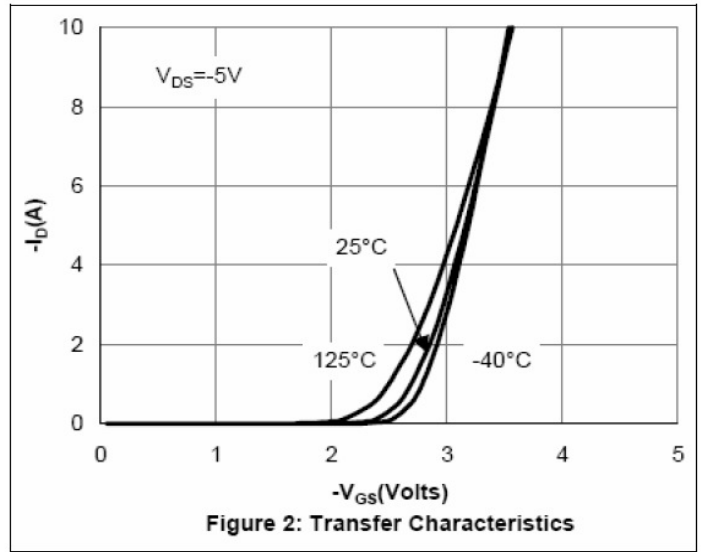
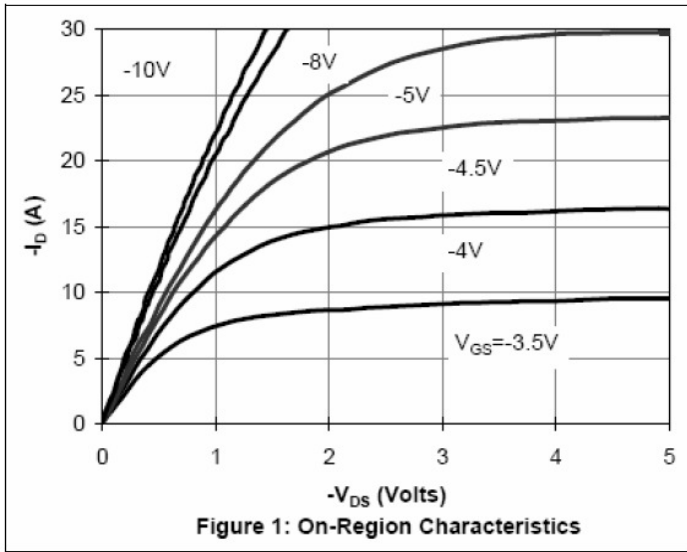
◆ Electrical Characteristics (T_A=25°C, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
• Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-30V, V _{GS} =0V	-	-	-1	uA
		V _{DS} =-30V, V _{GS} =0V, T _J =55°C	-	-	-5	
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
• On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250uA	-1	-1.4	-3	V
I _{DS(on)}	On state drain current	V _{DS} =-5V, V _{GS} =-10V	-30	-	-	A
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-4.3A	-	-	60	mΩ
		V _{GS} =-4.5V, I _D =-3.0A	-	-	78	
• Dynamic Characteristics^d						
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, f=1MHz	-	745	-	pF
C _{oss}	Output Capacitance		-	440	-	
C _{rss}	Reverse Transfer Capacitance		-	120	-	
R _g	Gate resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	-	6	9	Ω
• Switching Characteristics^d						
Q _g	Total Gate Charge(4.5V)	V _{DS} =-15V, I _D =-4.3A, V _{GS} =-10V	-	28	36.4	nC
Q _{gs}	Gate-Source Charge		-	3	3.9	
Q _{gd}	Gate-Drain Charge		-	7	9.1	
t _{d(on)}	Turn-on Delay Time	V _{DS} =-15V, R _L =15Ω, V _{GEN} =-10V, I _D =-1A, R _G =6Ω	-	9	18	nS
t _r	Turn-on Rise Time		-	15	30	
t _{d(off)}	Turn-off Delay Time		-	75	150	
t _f	Turn-off Fall Time		-	40	80	
t _{rr}	Body Diode Reverse Recovery Time	I _F =-4.3A, dI/dt=100A/us	-	22	30	nS
Q _{rr}	Body Diode Reverse Recovery Charge	I _F =-4.3A, dI/dt=100A/us	-	15	-	nC
• Drain-Source Diode Characteristics						
I _S	Maximum Diode Forward Current		-	-	-2.6	A
V _{SD}	Drain-Source Diode Forward Voltage	V _{GS} =0V, I _S =-2.6A	-	-	-1.3	V

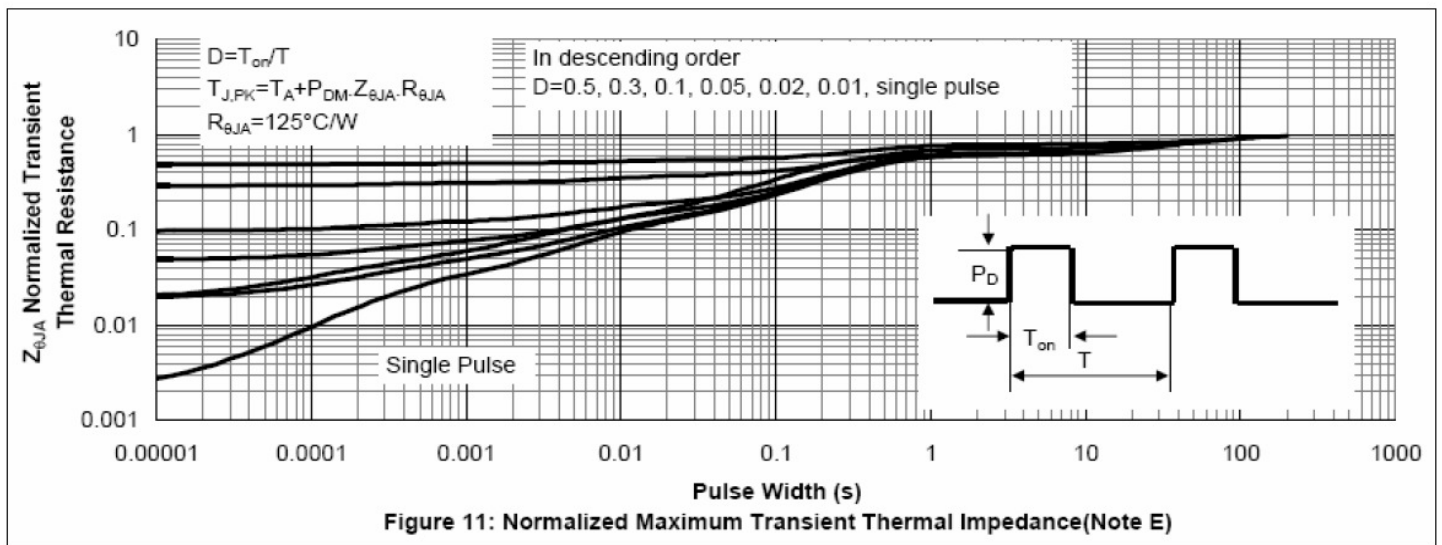
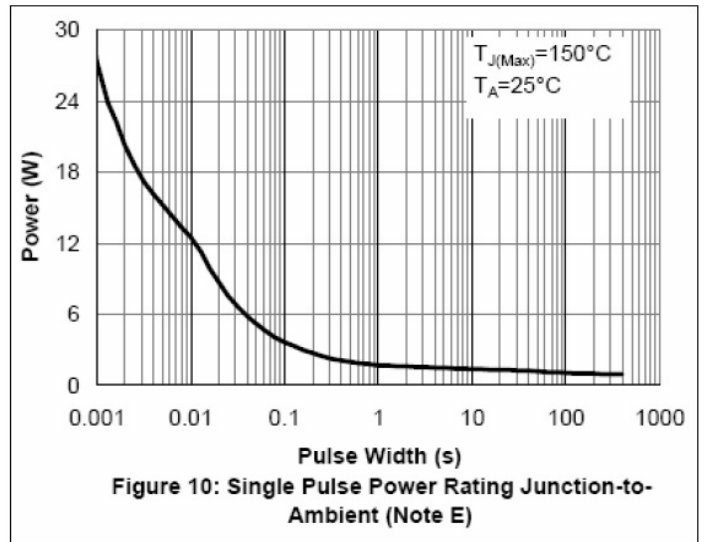
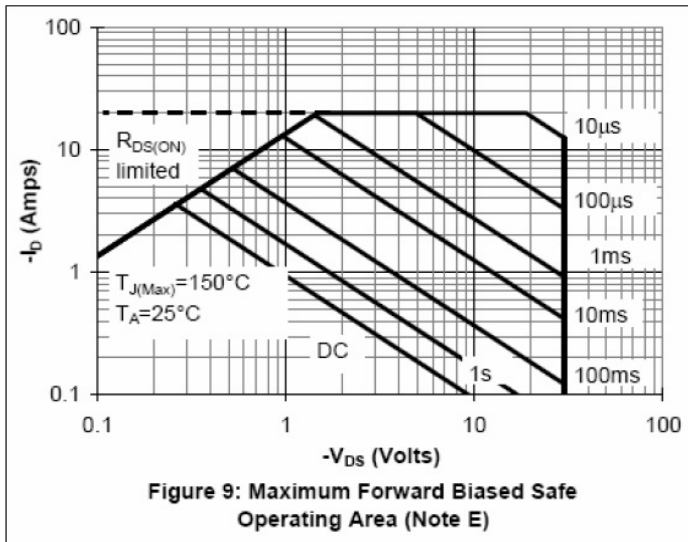
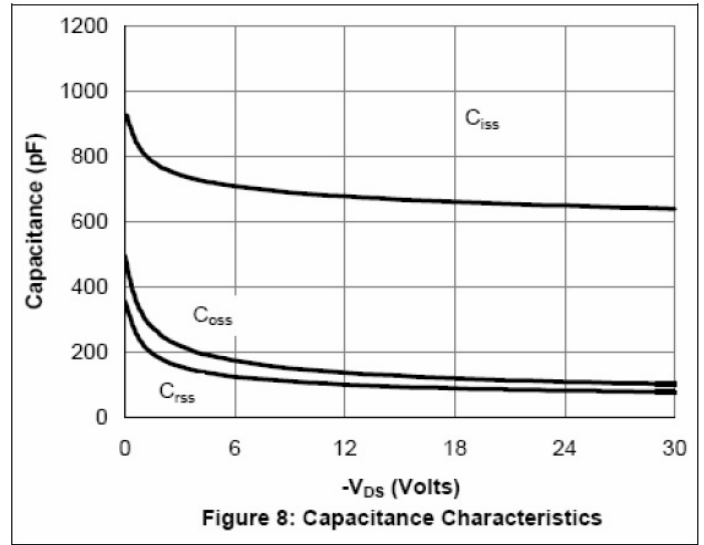
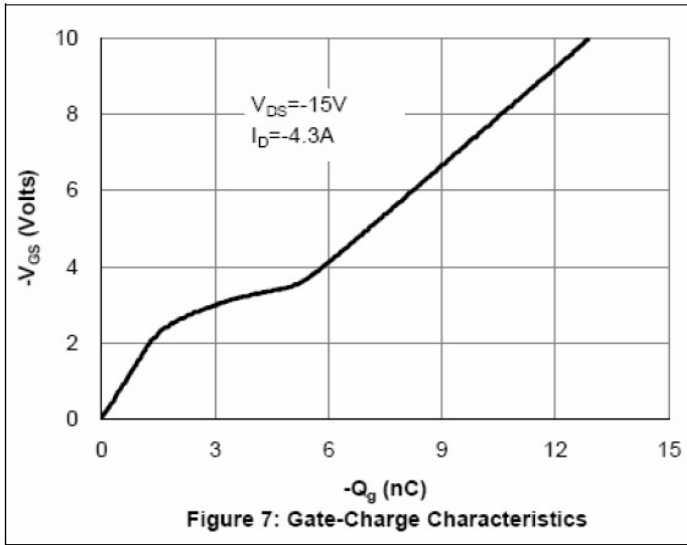
Note: Pulse Test: Pulse Width ≤300us, Duty Cycles≤2%

d: Guaranteed by design: not subject to production testing

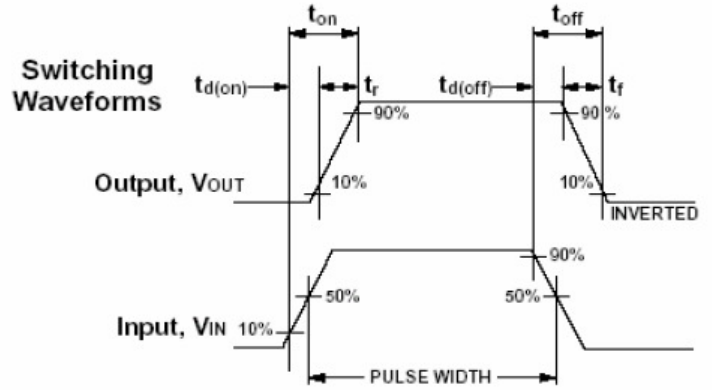
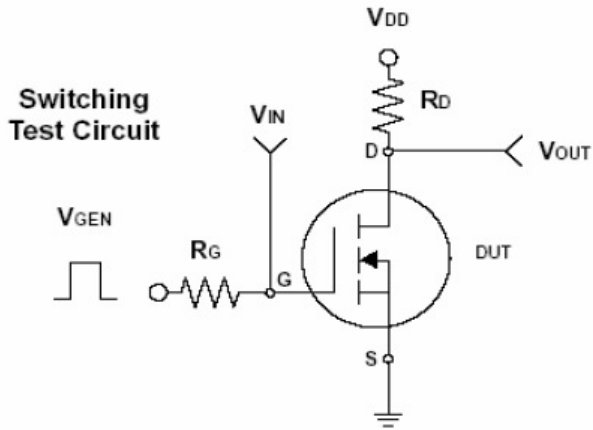
◆ Characteristics Curve



◆ Characteristics Curve



◆ Characteristics Curve



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