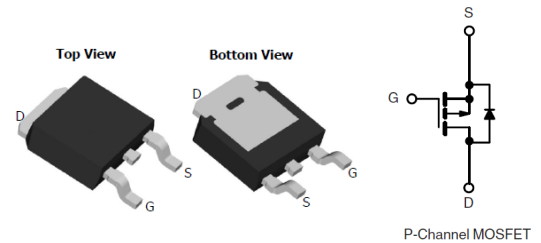


P-Channel Enhancement Mode Power MOSFET
PRIMARY CHARACTERISTICS

BV_{DSS}	$R_{DS(on)MAX}$	I_D
-100V	$270m\Omega @ V_{GS} = -10V$	-13.5A
	$290m\Omega @ V_{GS} = -4.5V$	

TO-252 PACKAGE

FEATURES

- DC-DC Converters
- Power Switch

MECHANICAL DATA

- Case : Molded plastic, TO-252
- Polarity : Shown above
- Terminals : Plated terminals, solderable per MIL-STD-750, Method 2026
- Epoxy : UL94-V0 rated flame retardant

Absolute Maximum Ratings @ $T_A = 25^\circ C$ unless otherwise noted

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	-100	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current (Continuous) *AC	$T_C = 25^\circ C$	I_D	-13.5	A
	$T_C = 100^\circ C$		-8.5	
Drain Current (Pulse) *B		I_{DM}	-30	A
Power Dissipation	$T_C = 25^\circ C$	P_D	42	W
Operating Temperature/ Storage Temperature		T_J/T_{STG}	-55~150	$^\circ C$

Thermal Resistance Ratings

Parameter		Symbol	Maximum	Unit
Maximum Junction-to-Ambient *A	$t \leq 10s$	R_{thJA}	50	$^\circ C/W$
Maximum Junction-to-Case (Drain)	Steady State	R_{thJC}	3	

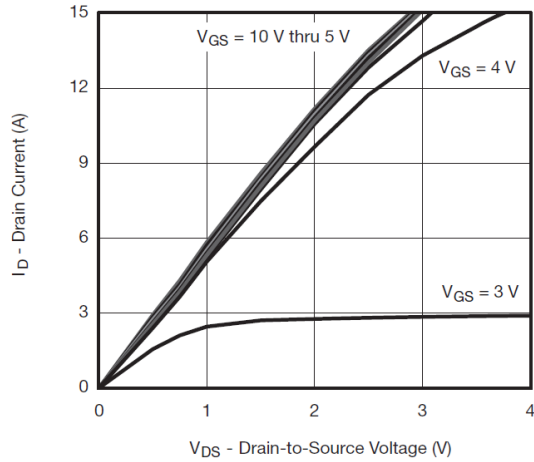
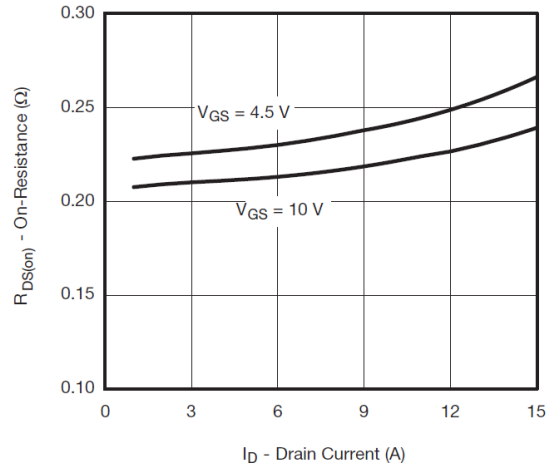
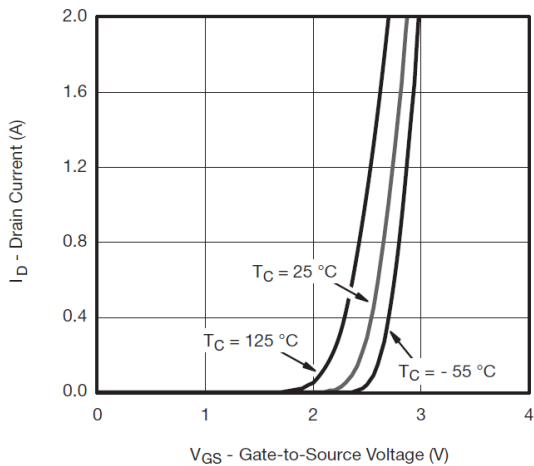
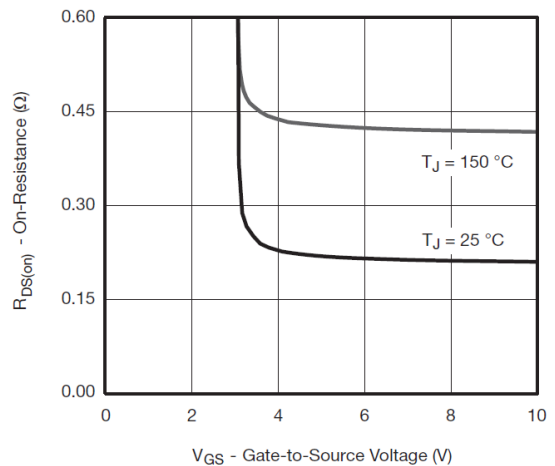
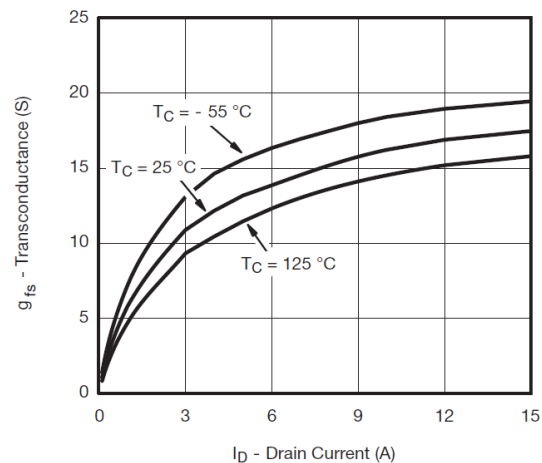
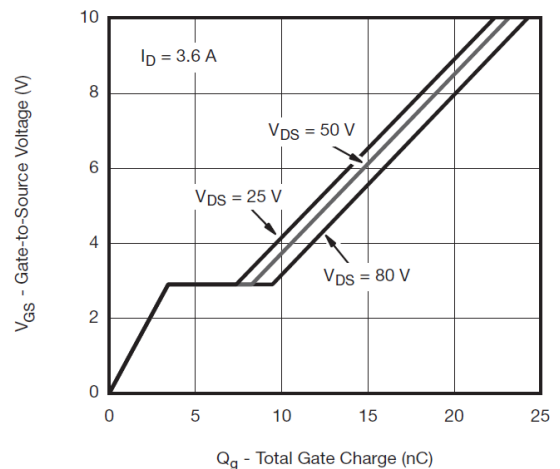
P-Channel Enhancement Mode Power MOSFET
Electrical Characteristics @T_A=25°C unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-100	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -80V, V _{GS} = 0V	--	--	-1	μA
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} = V _{DS} , I _{DS} = -250μA	-1	-1.7	-3	V
Gate Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V	--	--	±100	nA
Drain-Source On-state Resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -5A	--	210	270	mΩ
	R _{DS(on)}	V _{GS} = 4.5V, I _D = -4A	--	225	290	mΩ
Diode Forward Voltage	V _{SD}	I _{SD} = -1A , V _{GS} =0V	--	-0.75	-1.2	V
Diode Forward Current *AC	I _S	T _C =25°C	--	--	-13.5	A
Switching						
Total Gate Charge	Q _g	V _{GS} =-4.5V, V _{DS} =-50V, I _D =-3.6A	--	11.7	--	nC
Gate-Source Charge	Q _{gs}		--	3.5	--	nC
Gate-Drain Charge	Q _{gd}		--	4.8	--	nC
Turn-on Delay Time	t _{d (on)}	V _{GEN} =-10V, V _{DD} =-50V, I _D =-2.9A,R _G =1Ω, R _L =17.2Ω	--	7	--	ns
Turn-on Rise Time	t _r		--	12	--	ns
Turn-off Delay Time	t _{d(off)}		--	33	--	ns
Turn-Off Fall Time	t _f		--	9	--	ns
Dynamic						
Input Capacitance	C _{iss}	V _{DS} =-50V,V _{GS} =0V, f=1.0MHz	--	1055	--	pF
Output Capacitance	C _{oss}		--	65	--	pF
Reverse Transfer Capacitance	C _{rss}		--	41	--	pF

A: The value of R_{θJA} is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A = 25°C. The value in any given application depends on the user's specific board design.

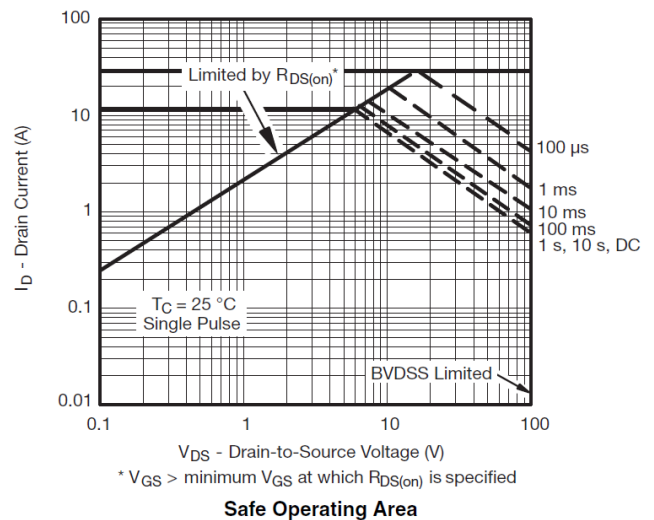
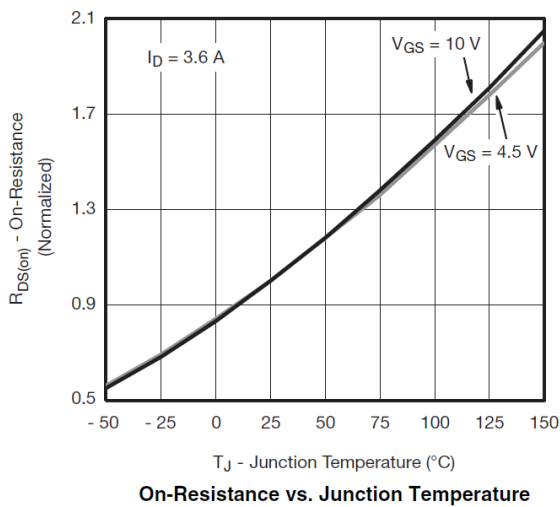
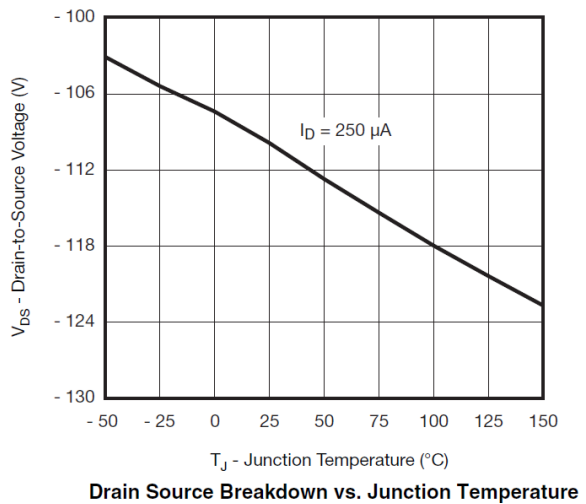
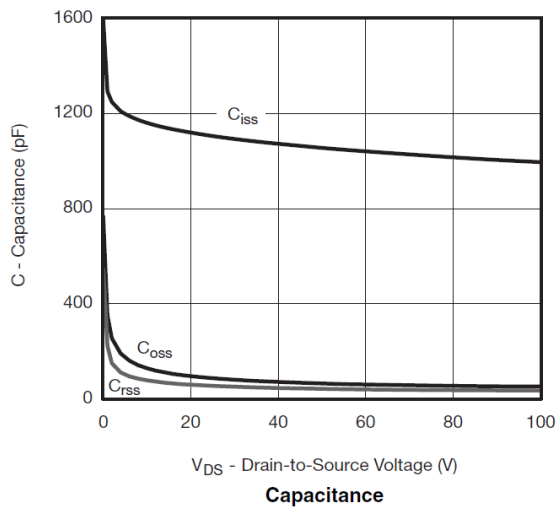
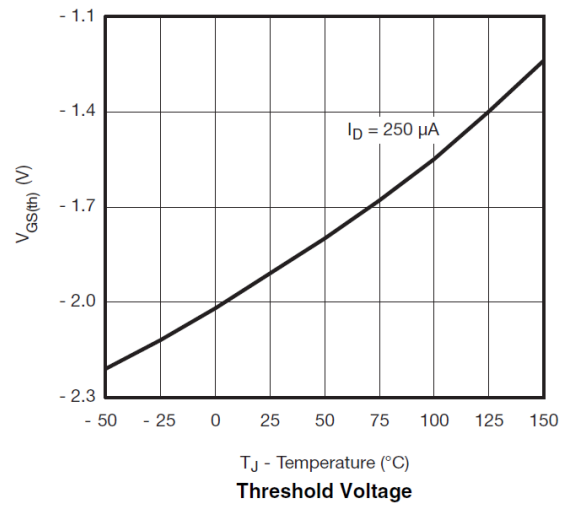
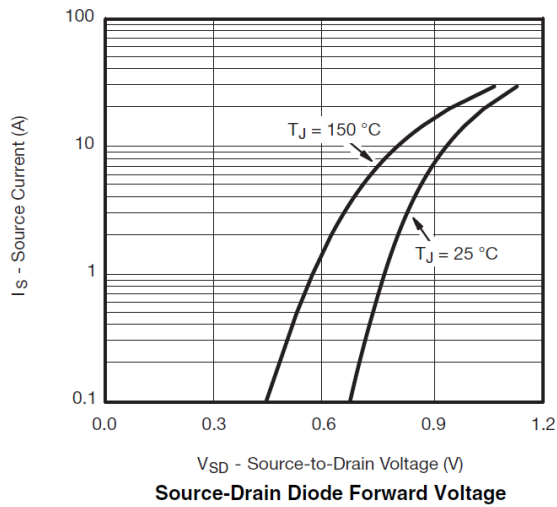
B: Repetitive rating, pulse width limited by junction temperature.

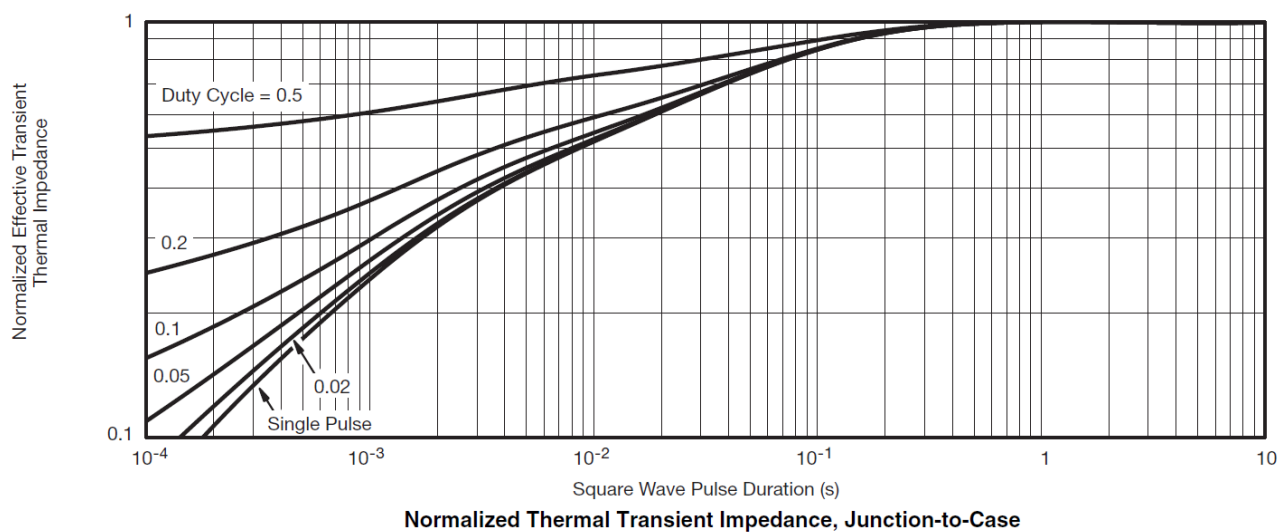
C: The current rating is based on the t_s ≤ 10s junction to ambient thermal resistance rating.

**Typical Performance Characteristics (T_J = 25 °C, unless otherwise noted)****Output Characteristics****On-Resistance vs. Drain Current****Transfer Characteristics****On-Resistance vs. Gate-to-Source Voltage****Transconductance****Gate Charge**



P-Channel Enhancement Mode Power MOSFET

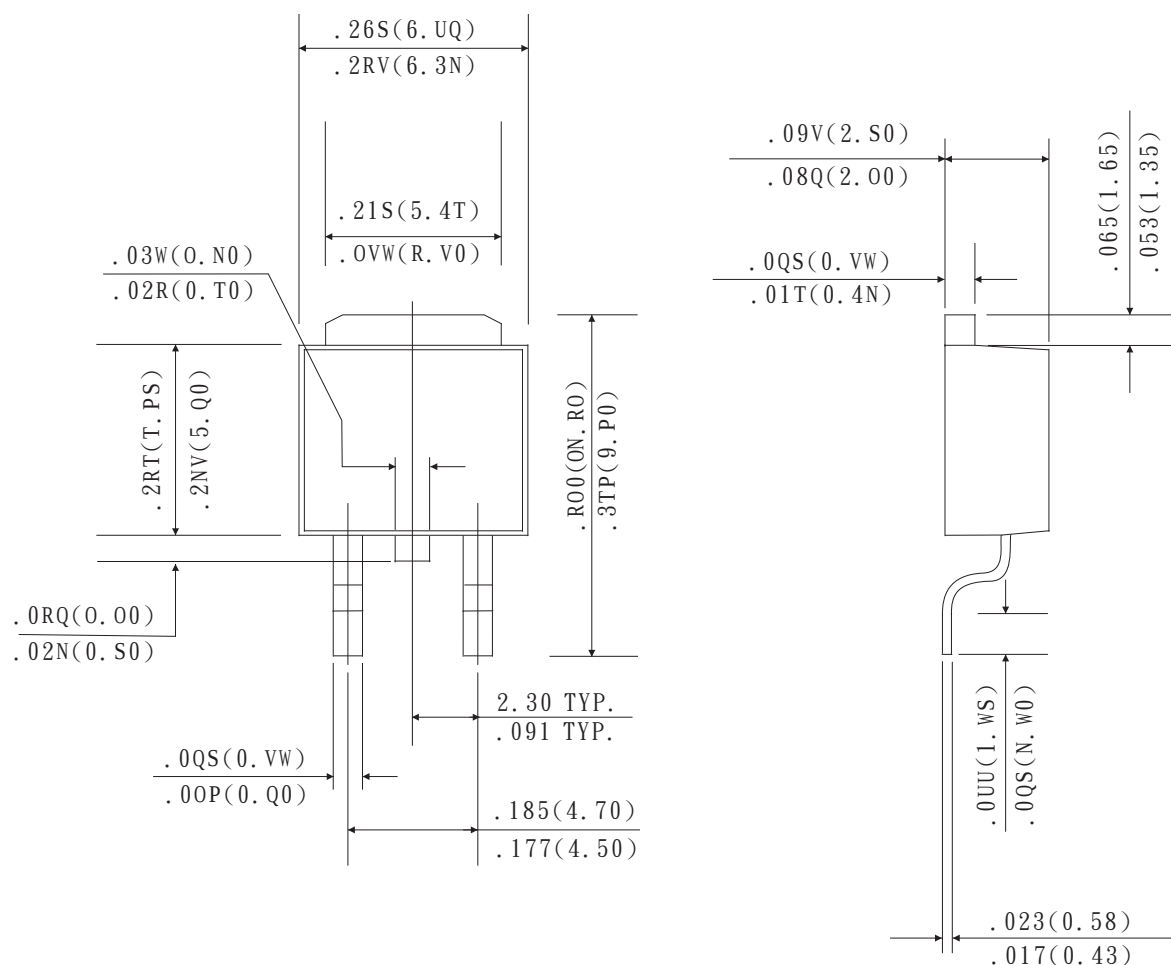


**P-Channel Enhancement Mode Power MOSFET**



Outline Drawing

TO-252



Dimensions in inches and (millimeters)

Rev.B

Ordering Information:

Device PN	Packing
SJA10P13 -T ⁽¹⁾ H ⁽²⁾ -WS ⁽³⁾	Tape&Reel: 2.5 Kpcs/Reel

Note: (1) Packing code, Tape & Reel Packing

(2) Halogen free product for packing code suffix "H"

(3) WS : Willas brand abbreviation, Label Type does not display

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