

Descriptions

This -5A,-30V P-Channel Enhancement Mode Field Effect Transistor in a SOP-8 Plastic Package.

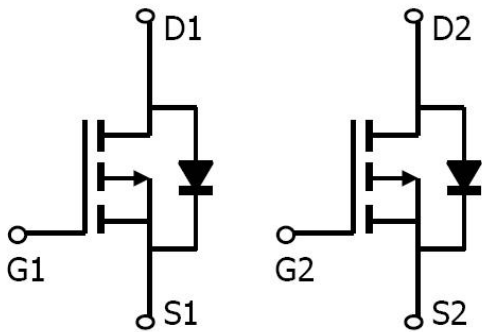
Features

- $V_{DS}(V)=-30V$ $I_D=-5.0A$
- $R_{DS(ON)} < 65m\Omega (V_{GS}=-10V)$
- $R_{DS(ON)} < 75m\Omega (V_{GS}=-4.5V)$

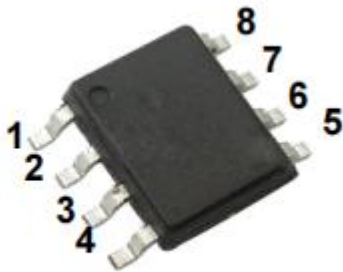
Applications

Power Management in Notebook computer, Portable Equipment and Battery powered systems and this device is suitable for use as a load switch or in PWM applications.

Equivalent Circuit



Pinning



PIN1: S2	PIN 2: G2	PIN 3: S1	PIN 4: G1
PIN 5: D1	PIN 6: D1	PIN 7: D2	PIN 8: D2

Absolute Maximum Ratings($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current ^A	$I_D (T_a=25^{\circ}\text{C})$	-5.0	A
	$I_D (T_a=70^{\circ}\text{C})$	-4.2	A
Pulsed Drain Current ^B	I_{DM}	-20	A
Power Dissipation for Single Operation ^A	$P_D (T_a=25^{\circ}\text{C})$	2.0	W
	$P_D (T_a=70^{\circ}\text{C})$	1.4	W
Junction and Storage Temperature Range	T_J, T_{stg}	-55 ~ +150	$^{\circ}\text{C}$
Thermal Resistance-Junction to Ambient ^A	$R_{\theta JA} (t \leq 10s)$	62.5	$^{\circ}\text{C/W}$
	$R_{\theta JA}$	110	$^{\circ}\text{C/W}$
Maximum Junction-to-Lead ^C	$R_{\theta JL}$	40	$^{\circ}\text{C/W}$

Note:

A: The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^{\circ}\text{C}$. The value in any given application depends on the user's specific board design. The current rating is based on the $t \leq 10s$ thermal resistance rating.

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

C: The $R_{\theta JA}$ is the sum of the thermal impedance from junction to lead $R_{\theta JL}$ and lead to ambient.

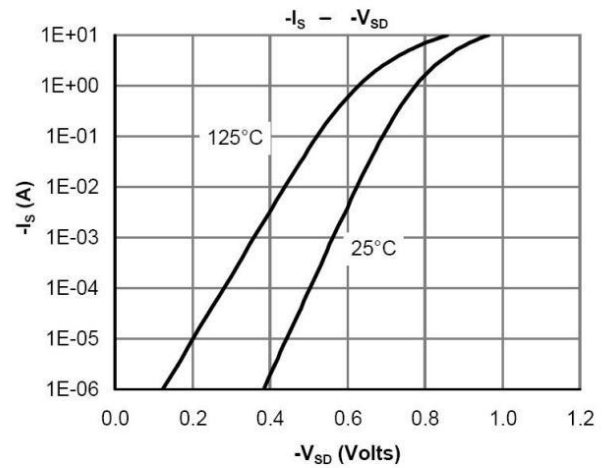
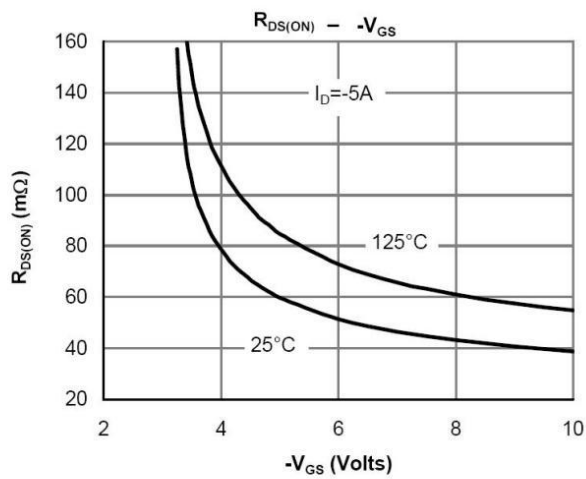
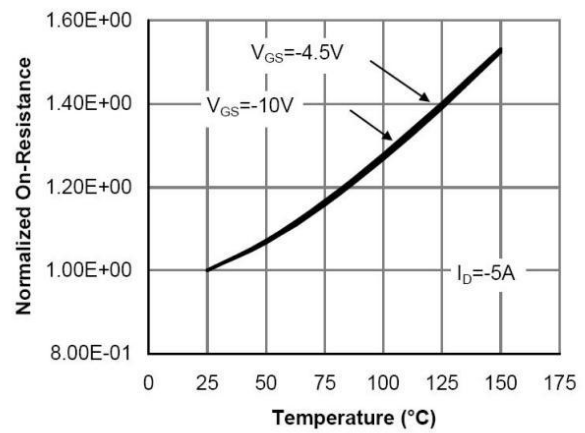
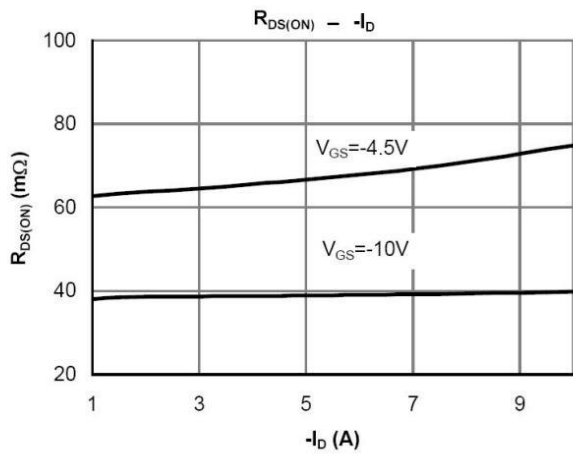
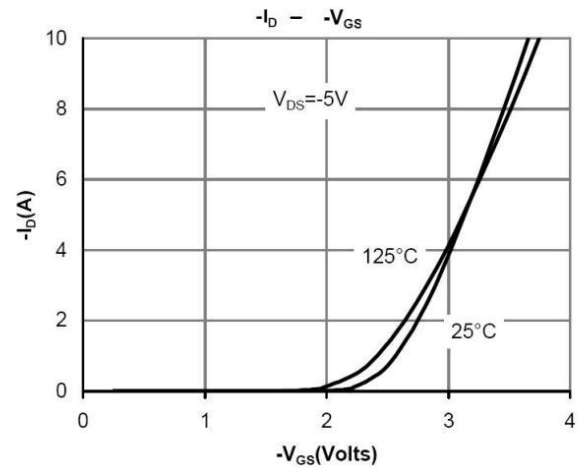
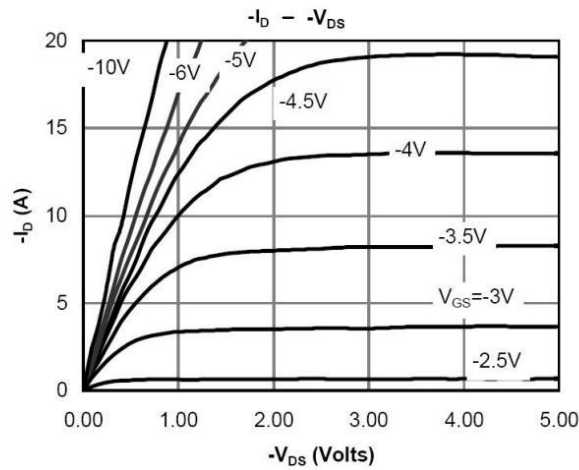
D: The static characteristics in Figures 1 to 6,12,14 are obtained using 80 μs pulses, duty cycle 0.5% max.

E: These tests are performed with the device mounted on 1 in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^{\circ}\text{C}$. The SOA curve provides a single pulse rating.

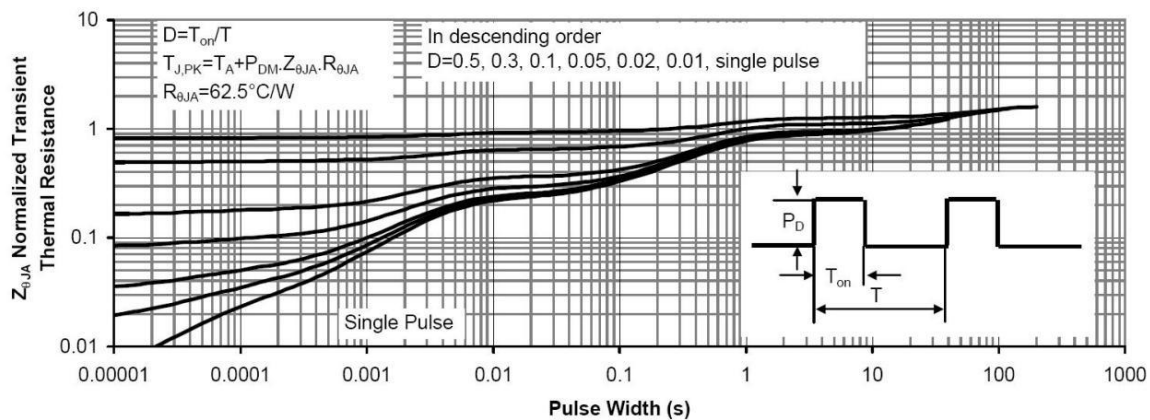
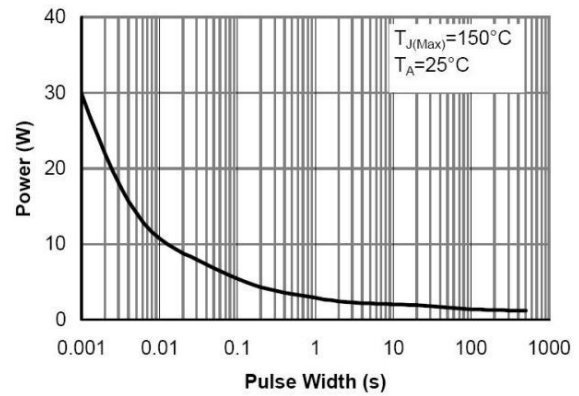
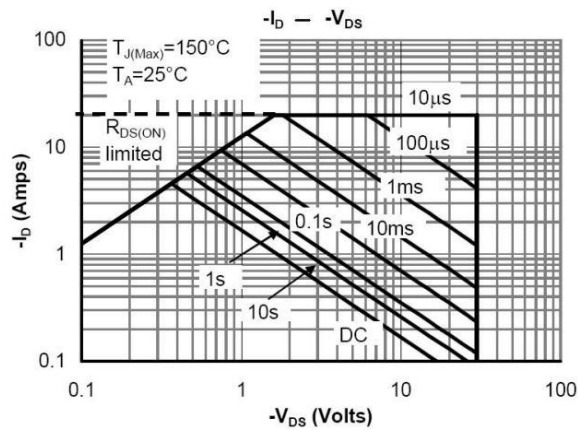
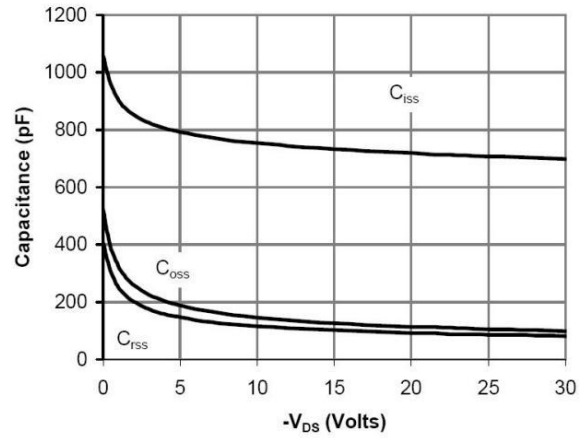
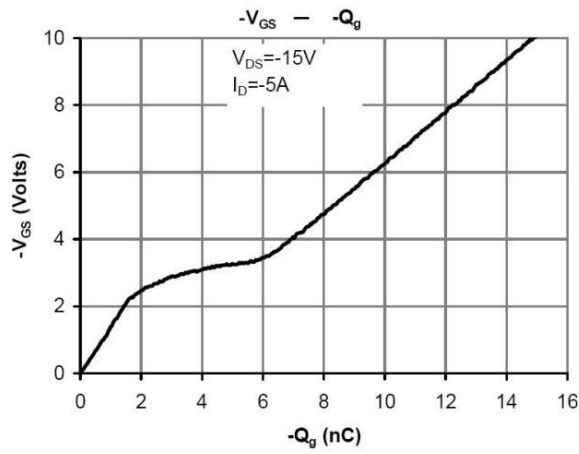
Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = -250\mu A$ $V_{GS} = 0V$	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -24V$ $V_{GS} = 0V$			-1.0	μA
		$V_{DS} = -24V$ $V_{GS} = 0V$ $T_J = 55^\circ C$			-5.0	
Gate-Body leakage current	I_{GSS}	$V_{DS} = 0V$ $V_{GS} = \pm 12V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$ $I_D = -250\mu A$	-0.5	-0.7	-1.3	V
On state drain current	$I_{D(ON)}$	$V_{GS} = -4.5V$ $V_{DS} = -5.0V$	5			A
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = -10V$ $I_D = -5.0A$		56	65	m Ω
		$V_{GS} = -10V$ $I_D = -5.0A$ $T_J = 125^\circ C$		65	86	
		$V_{GS} = -4.5V$ $I_D = -4.0A$		64	75	
Forward Transconductance	g_{FS}	$V_{DS} = -5.0V$ $I_D = -5.0A$		12		S
Diode Forward Voltage	V_{SD}	$I_S = -1.0A$ $V_{GS} = 0$		-0.76	-1.0	V
Total Gate Charge(10V)	Q_g	$V_{GS} = -10V$ $V_{DS} = -15V$ $I_D = -5.0A$		14.7		nC
Total Gate Charge(4.5V)				7.6		
Gate-Source Charge	Q_{gs}			2.0		
Gate-Drain Charge	Q_{gd}			3.8		
Gate Resistance	R_g	$V_{GS} = 0V$ $V_{DS} = 0V$ $f = 1MHz$		10		Ω
Input Capacitance	C_{iss}	$V_{GS} = 0V$ $V_{DS} = -15V$ $f = 1MHz$		700		pF
Output Capacitance	C_{oss}			120		
Reverse Transfer Capacitance	C_{rss}			75		
Turn-on Delay Time	$t_{d(ON)}$	$V_{GS} = -10V$ $V_{DS} = -15V$ $R_L = 3.0\Omega$ $R_{GEN} = 3.0\Omega$		8.3		ns
Turn-on Rise Time	t_r			5.0		
Turn-off Delay Time	$t_{d(OFF)}$			29		
Turn-off Fall Time	t_f			14		
Body Diode Reverse Recovery Time	t_{rr}	$I_F = -5.0A$ $dI/dt = 100A/\mu s$		23.5		ns
Body Diode Reverse Recovery Charge	Q_{rr}	$I_F = -5.0A$ $dI/dt = 100A/\mu s$		13.4		nC

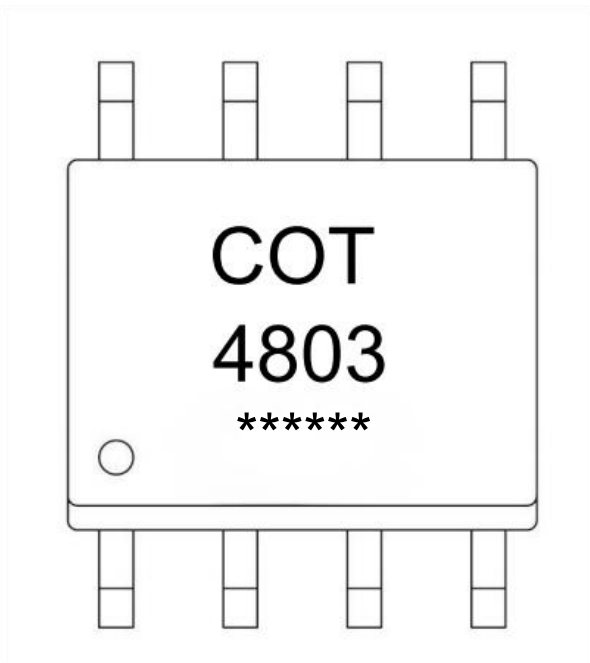
Electrical Characteristic Curve



Electrical Characteristic Curve



Marking Instructions



Note:

COT: Company Logo

4803 Product Type.

***** Lot No. Code, code change with Lot No.

Packaging SPEC

REEL INFORMATION

Package Type	Units					Dimension (unit: mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOP-8	4,000	2	8,000	6	48,000	13" ×12	360×360×50	380×335×366

Package Outline Dimensions

SOP-8

Unit:mm

