Description

This -30V -4.9A Dual P-Channel Power Trench MOSFET in a SOP-8 Plastic Package.

Applications

Power Management in Notebook computer, Portable Equipment and Battery powered systems.

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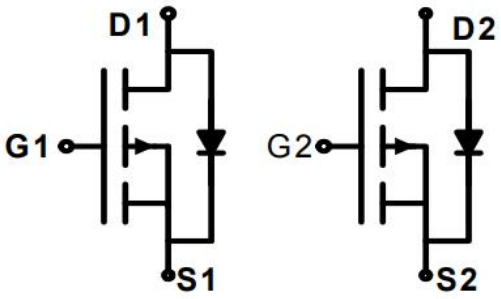
Features

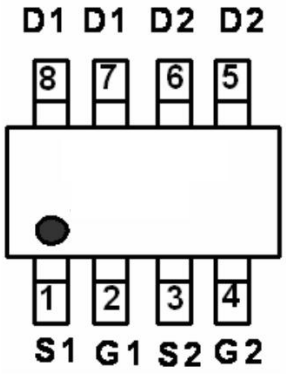
- Super high dense cell design for low $R_{DS(ON)}$
- Rugged and reliable
- Halogen-free Product

V_{DSS}	$R_{DS(ON)}$ (Typ)	I_D
-30V	53mΩ	-4.9A

Equivalent Circuit & Pinning



Schematic diagram



Pin Assignment

SOP-8 top view

Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	-30	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current	I_D *	-4.9	A
Pulsed Drain Current	I_{DM}*	-20	A
Diode Continuous Forward Current	I_S*	-2.0	A
Power Dissipation for Single Operation	P_D* (Ta=25℃)	2	W
Power Dissipation for Single Operation	P_D* (Ta=100℃)	0.8	W
Maximum Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$*	62.5	℃/W

Note:
* Surface Mounted on 1in2 pad area, t ≤ 10sec.

Electrical Characteristics(Ta=25℃)

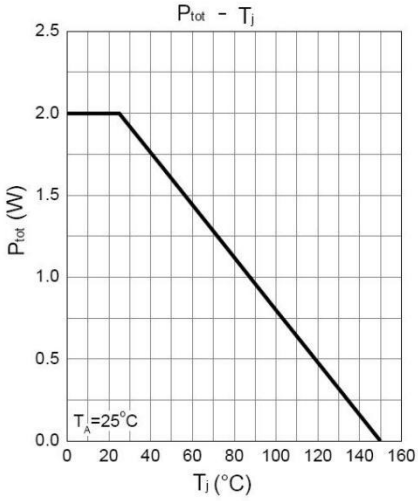
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_{DS}=-250μA	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-24V V_{GS}=0V			-1	μA
		V_{DS}=-24V V_{GS}=0V T_J=85°C			-30	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=VGS I_{DS}=-250μA	-1.0	-1.45	-2.0	V
Gate Leakage Current	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±100	nA
Drain-Source On-state Resistance	$R_{DS(ON)}$[a]	V_{GS}=-10V I_{DS}=-4.9A		53	60	mΩ
		V_{GS}=-4.5V I_{DS}=-3.6A		80	95	
Diode Forward Voltage	V_{SD}[a]	V_{GS}=0V I_{SD}=-3.0A		-0.7	-1.3	V
Total Gate Charge	Q_g[b]	V_{DS}=-15V V_{GS}=-10V I_{DS}=-4.9A		22.6	30	nC
Gate-Source Charge	Q_{gs}[b]			4.7		nC
Gate-Drain Charge	Q_{gd}[b]			2.0		nC

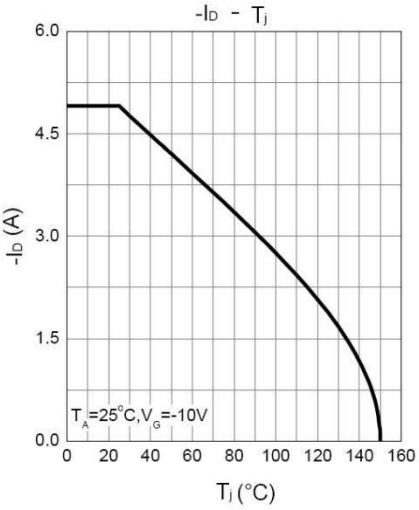
Electrical Characteristics(Ta=25℃)

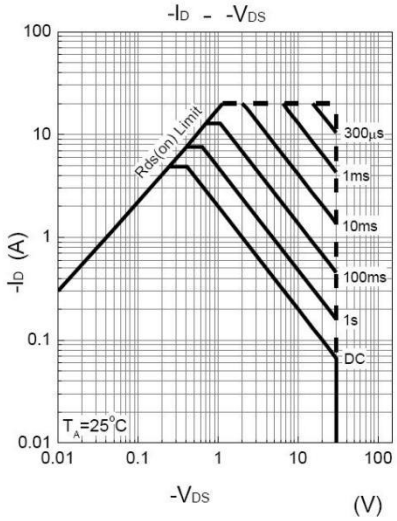
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Gate Resistance	R_G[b]	V_{GS}=0V V_{DS}=0V F=1MHz		11		Ω
Input Capacitance	C_{iss}[b]	V_{GS}=0V V_{DS}=-25V Frequency=1.0MHz		1260		pF
Output Capacitance	C_{oss}[b]			400		
Reverse Transfer Capacitance	C_{rss}[b]			220		
Turn-on Delay Time	$t_{d(ON)}$[b]	V_{DD}=-15V R_L=15Ω I_{DS}=-1A V_{GEN}=-10V R_G=6Ω		10	18	ns
Turn-on Rise Time	T_r[b]			15	20	
Turn-off Delay Time	$T_{d(OFF)}$[b]			22	38	
Turn-off Fall Time	T_f[b]			15	25	

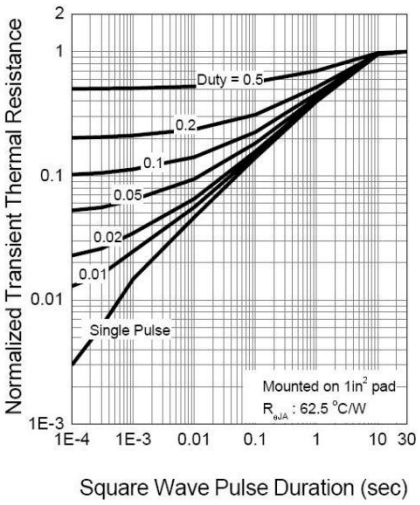
Notes:
a : Pulse test ; pulse width≤300μs, duty cycle≤2%.
b : Guaranteed by design, not subject to production testing.

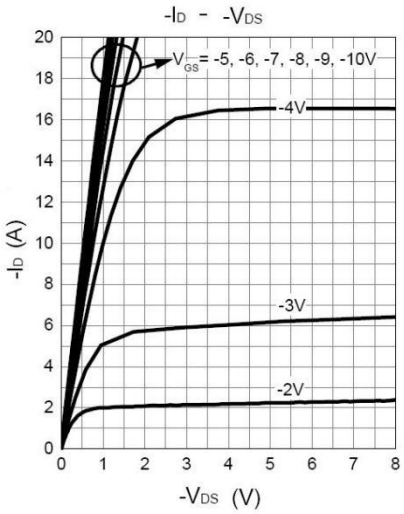
Electrical Characteristic Curve

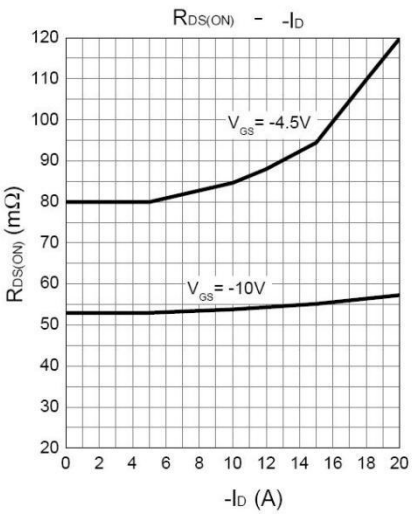




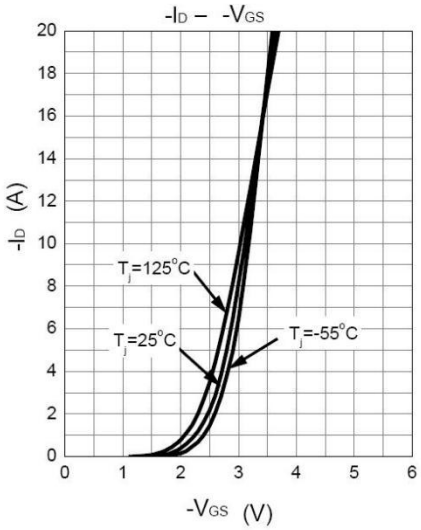


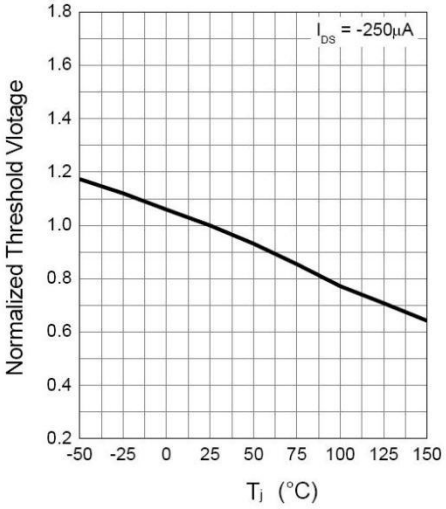


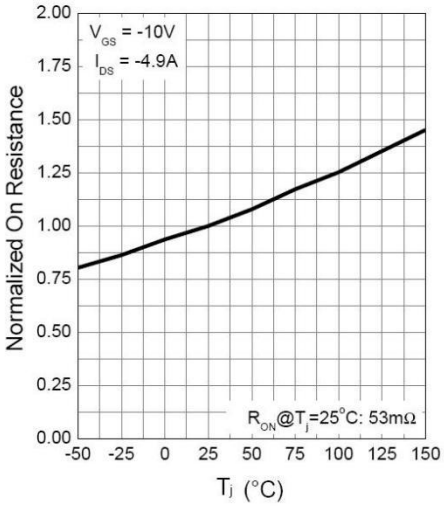


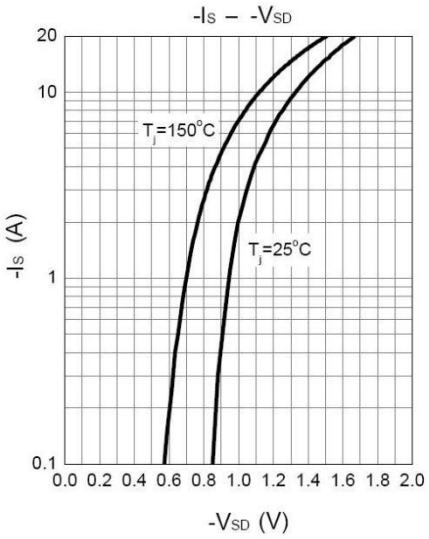


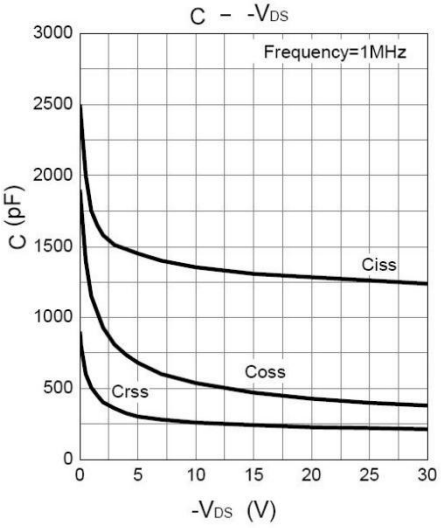
Electrical Characteristic Curve

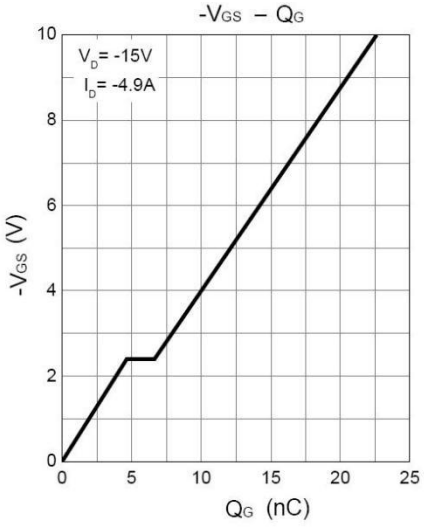




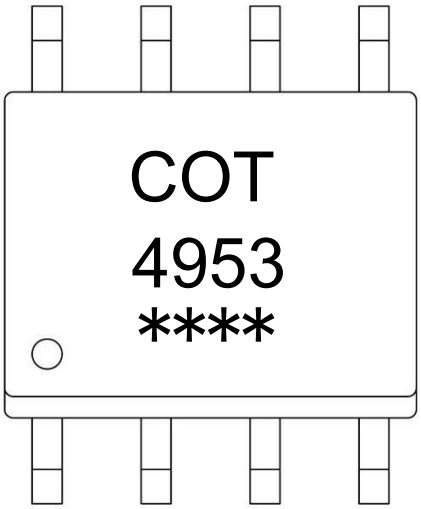








Marking Instructions



Note:

COT: Company Logo

4953: Product Type.

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

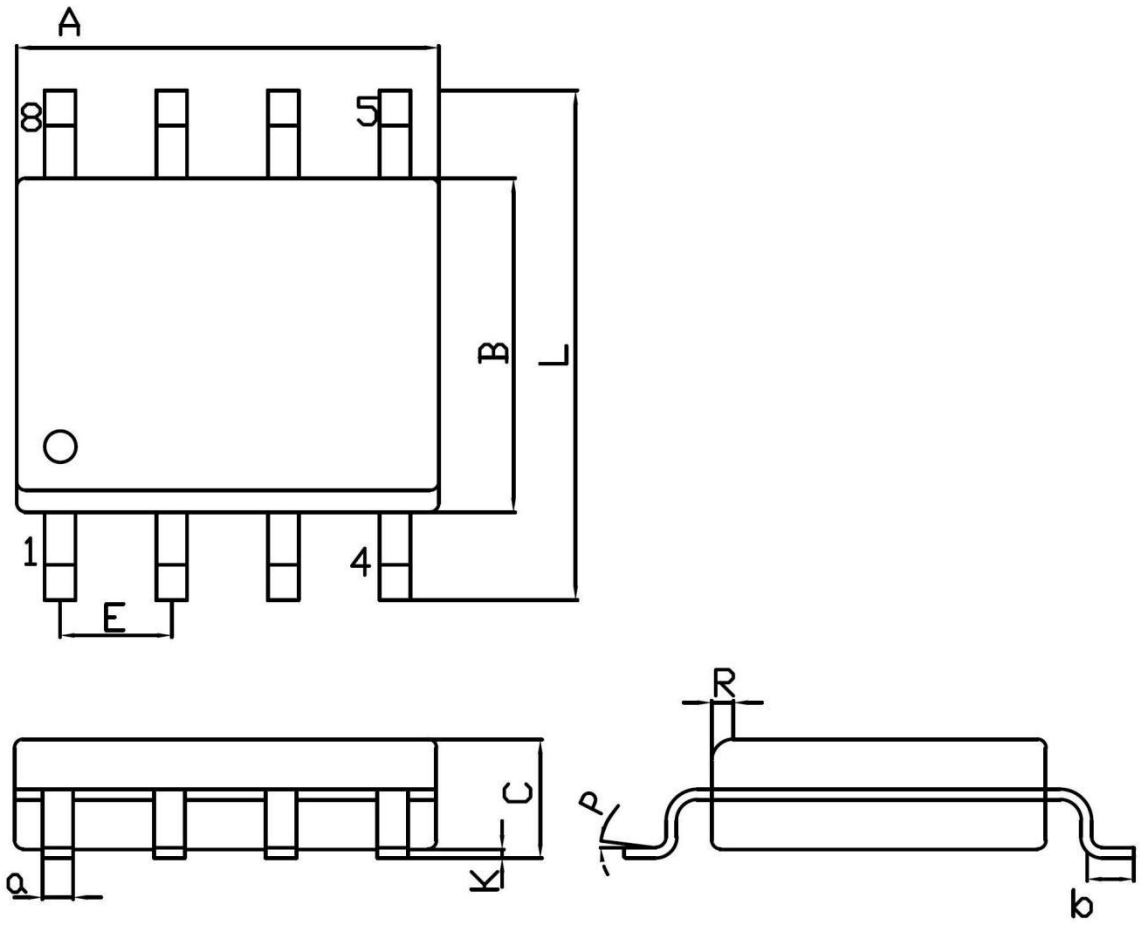
Packaging SPEC.

REEL INFORMATION

Package Type	Units					Dimension (unit：mm³)		
	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



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.70	5.10	C	1.35	1.75
B	3.70	4.10	a	0.35	0.49
L	5.80	6.20	R	0.30	0.60
E	1.27BSC		P	0°	7°
K	0.12	0.22	b	0.40	1.25