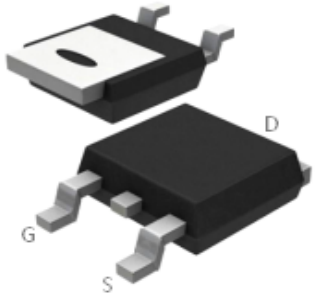
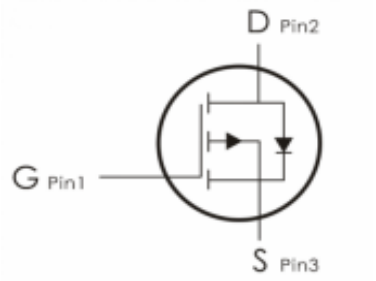
Description：

This P-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.





Features：

1) V_{DS}=-100V,I_D=-12A,$R_{DS(ON)}$<200m Ω @V_{GS}=-10V
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra $R_{DS(ON)}$.
5) Excellent package for good heat dissipation.

Absolute Maximum Ratings： (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	-100	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current- TC=25℃	-12	A
	Continuous Drain Current-TC=100℃	-6.5	
I_{DM}	Drain Current – Pulsed[1]	-40	
P_D	Power Dissipation-TC=25℃	54	W
	Power Dissipation – Derate above 25℃	0.43	W/℃
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55-+150	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case	2.3	℃/W
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient	62	

Package Marking and Ordering Information：

Part NO.	Marking	Package
RD3P130SPTL1-DO	RD3P130	TO-252

Electrical Characteristics： (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	-100	---	---	V
	BV_{DSS} Temperature Coefficient	Reference to 25℃ ID=-1mA	---	---	---	V/℃
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}0V, V_{DS}=-100V T_J=25℃	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=-250μA	-1	---	-3	V
$R_{DS(ON)}$	Drain-Source On Resistance	V_{GS}=-10V,I_D=-5A	---	170	200	mΩ
		V_{GS}=-4.5V,I_D=-2A	---	190	230	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=-25V, V_{GS}=0V, f=1MHz	---	1419	2500	pF
C_{oss}	Output Capacitance		---	89	170	
C_{rss}	Reverse Transfer Capacitance		---	45	90	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DD}=-50V, I_D=-5A, R_{GEN}=25Ω .V_{GS}=-10V	---	18	36	ns
t_r	Rise Time		---	8	16	ns
$t_{d(off)}$	Turn-Off Delay Time		---	100	200	ns
t_f	Fall Time		---	30	60	ns
Q_g	Total Gate Charge	V_{GS}=-10V, V_{DS}=-80V,	---	20	40	nC

Q_{gs}	Gate-Source Charge	I_D=-5A	---	3.5	7	nC
Q_{gd}	Gate-Drain "Miller" Charge		---	4.6	9	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage	V_{GS}=0V,I_S=-1A, T_J=25℃	---	---	-1.2	V
Ls	Diode Forward Current		---	---	-12	A
Trr	Reverse Recovery Time[2]	V_{GS}=0V,Is=-5A , dI/dt=100A/μs T =25℃	---	26.6	---	NS
Qrr	Reverse Recovery Charge[2]		---	24.2	---	NC

Notes:

1. Repetitive Rating : Pulsed width limited by maximum junction temperature.
2. The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%.
3. Essentially independent of operating temperature.

Typical Characteristics: (T_C=25℃ unless otherwise noted)

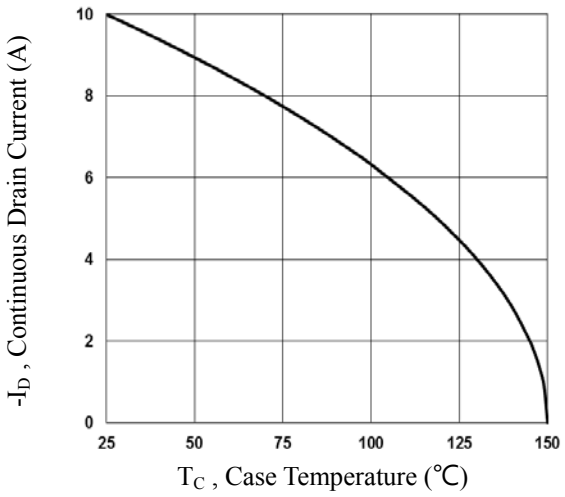


Fig.1 Continuous Drain Current vs. T_C

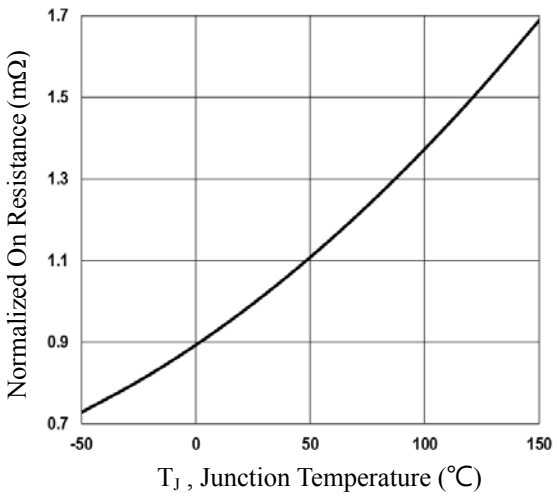


Fig.2 Normalized RDSON vs. T_J

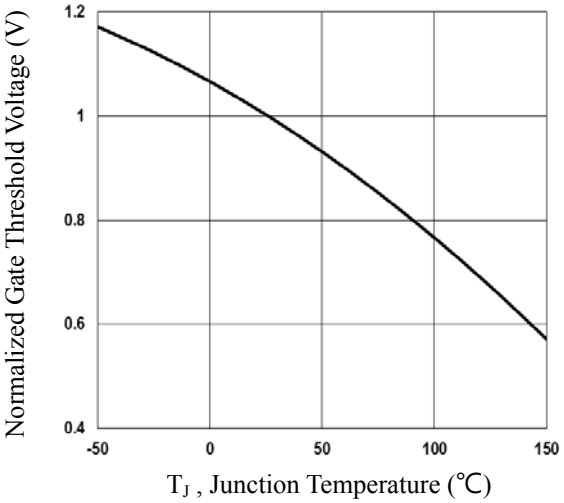


Fig.3 Normalized V_{th} vs. T_J

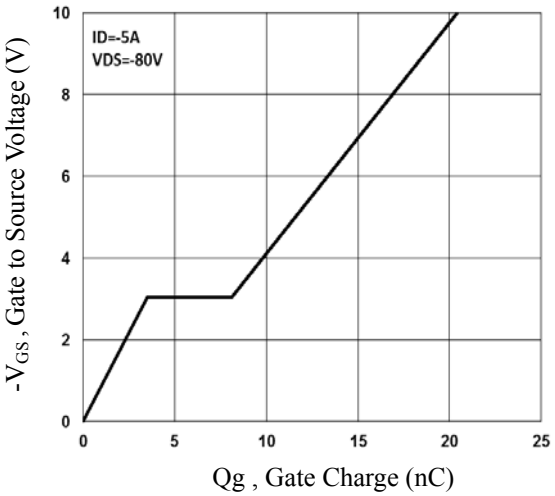


Fig.4 Gate Charge Waveform

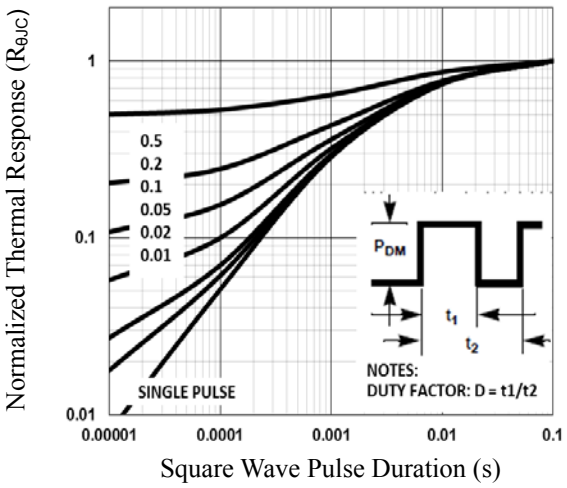


Fig.5 Normalized Transient Impedance

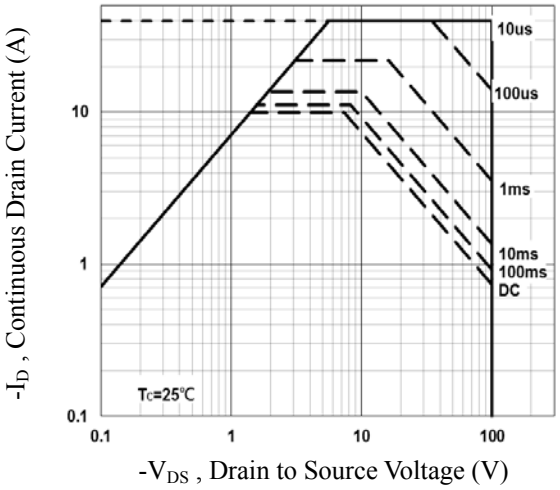


Fig.6 Maximum Safe Operation Area