TY Semicondutor®

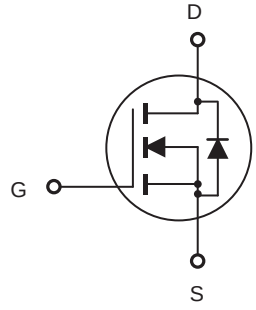
Product specification

CES2314

FEATURES

- 30V, 4A, $R_{DS(ON)}$ = 50mΩ @V_{GS} = 10V.
  $R_{DS(ON)}$ = 70mΩ @V_{GS} = 4.5V.
- High dense cell design for extremely low $R_{DS(ON)}$.
- Lead free product is acquired.
- Rugged and reliable.
- SOT-23 package.

SOT-23



ABSOLUTE MAXIMUM RATINGS T_A = 25°C unless otherwise noted

Parameter	Symbol	Limit	Units
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	4	A
Drain Current-Pulsed [a]	I_{DM}	16	A
Maximum Power Dissipation	P_D	1.25	W
Operating and Store Temperature Range	T_J,T_{stg}	-55 to 150	°C

Thermal Characteristics

Parameter	Symbol	Limit	Units
Thermal Resistance, Junction-to-Ambient [b]	$R_{\theta JA}$	100	°C/W

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Electrical Characteristics T_A = 25℃ unless otherwise noted

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D = 250μA	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 24V, V_{GS} = 0V			1	μA
Gate Body Leakage Current, Forward	I_{GSSF}	V_{GS} = 20V, V_{DS} = 0V			100	nA
Gate Body Leakage Current, Reverse	I_{GSSR}	V_{GS} = -20V, V_{DS} = 0V			-100	nA
On Characteristics [c]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS} = V_{DS}, I_D = 250μA	1.0		3.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 4A		40	50	mΩ
		V_{GS} = 4.5V, I_D = 3A		55	70	mΩ
Forward Transconductance	g_{FS}	V_{DS} = 5V, I_D = 4A		8		S
Dynamic Characteristics [d]						
Input Capacitance	C_{iss}	V_{DS} = 15V, V_{GS} = 0V, f = 1.0 MHz		650		pF
Output Capacitance	C_{oss}			182		pF
Reverse Transfer Capacitance	C_{rss}			85		pF
Switching Characteristics [d]						
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 15V, I_D = 4A, V_{GS} = 10V, R_{GEN} = 6Ω		10	20	ns
Turn-On Rise Time	t_r			3	8	ns
Turn-Off Delay Time	$t_{d(off)}$			22	45	ns
Turn-Off Fall Time	t_f			3	8	ns
Total Gate Charge	Q_g	V_{DS} = 15V, I_D = 4A, V_{GS} = 4.5V		5.3	7	nC
Gate-Source Charge	Q_{gs}			2.6		nC
Gate-Drain Charge	Q_{gd}			1.3		nC
Drain-Source Diode Characteristics and Maximun Ratings						
Drain-Source Diode Forward Current [b]	I_S				1	A
Drain-Source Diode Forward Voltage [c]	V_{SD}	V_{GS} = 0V, I_S = 1A			1.2	V

Notes :
a.Repetitive Rating : Pulse width limited by maximum junction temperature.
b.Surface Mounted on FR4 Board, t ≤ 10 sec.
c.Pulse Test : Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
d.Guaranteed by design, not subject to production testing.