查询"CED6031L"供应商

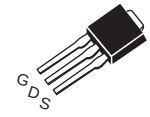
CED6031L/CEU6031L

N-Channel Enhancement Mode Field Effect Transistor

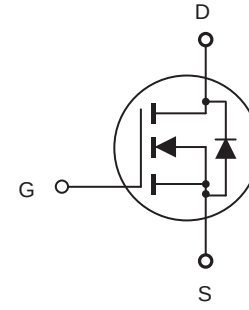
FEATURES

- 30V, 55A, $R_{DS(ON)}$ = 11mΩ @V_{GS} = 10V.
  $R_{DS(ON)}$ = 15mΩ @V_{GS} = 4.5V.
- Super high dense cell design for extremely low $R_{DS(ON)}$.
- High power and current handing capability.
- Lead free product is acquired.
- TO-251 & TO-252 package.

CEU SERIES
TO-252(D-PAK)



CED SERIES
TO-251(I-PAK)



ABSOLUTE MAXIMUM RATINGS T_C = 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	55	A
Drain Current-Pulsed [a]	I_{DM}	140	A
Maximum Power Dissipation @ T_C = 25°C	P_D	50	W
- Derate above 25°C		0.3	W/°C
Operating and Store Temperature Range	T_J,T_{stg}	-55 to 175	°C

Thermal Characteristics

Parameter	Symbol	Limit	Units
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	3	°C/W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	50	°C/W

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Electrical Characteristics $T_C = 25^{\circ}C$ 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 [b]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS} = V_{DS}, I_D = 250μA	1	1.6	3	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 5A		8.5	11	mΩ
		V_{GS} = 4.5V, I_D = 5A		12	15	mΩ
Forward Transconductance	g_{FS}	V_{DS} = 10V, I_D = 26A		32		S
Dynamic Characteristics [c]						
Input Capacitance	C_{iss}	V_{DS} = 15V, V_{GS} = 0V, f = 1.0 MHz		1800		pF
Output Capacitance	C_{oss}			700		pF
Reverse Transfer Capacitance	C_{rss}			200		pF
Switching Characteristics [c]						
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 15V, I_D = 55A, V_{GS} = 10V, R_{GEN} = 24Ω		10	16	ns
Turn-On Rise Time	t_r			190	250	ns
Turn-Off Delay Time	$t_{d(off)}$			55	90	ns
Turn-Off Fall Time	t_f			130	200	ns
Total Gate Charge	Q_g	V_{DS} = 24V, I_D = 48A, V_{GS} = 5V		27	33	nC
Gate-Source Charge	Q_{gs}			6		nC
Gate-Drain Charge	Q_{gd}			14		nC
Drain-Source Diode Characteristics and Maximun Ratings						
Drain-Source Diode Forward Current	I_S				55	A
Drain-Source Diode Forward Voltage [b]	V_{SD}	V_{GS} = 0V, I_S = 26A		0.93	1.3	V

Notes :
a.Repetitive Rating : Pulse width limited by maximum junction temperature.
b.Pulse Test : Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
c.Guaranteed by design, not subject to production testing.

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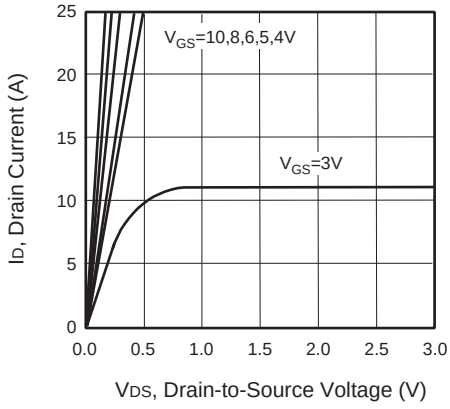

Figure 1. Output Characteristics

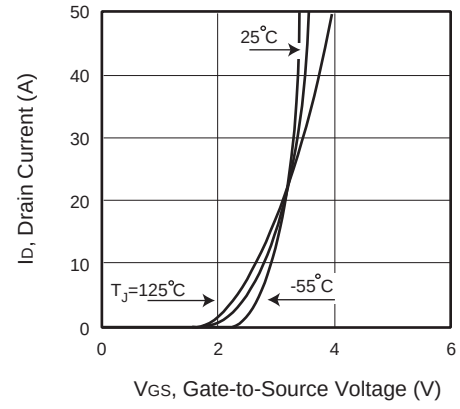

Figure 2. Transfer Characteristics

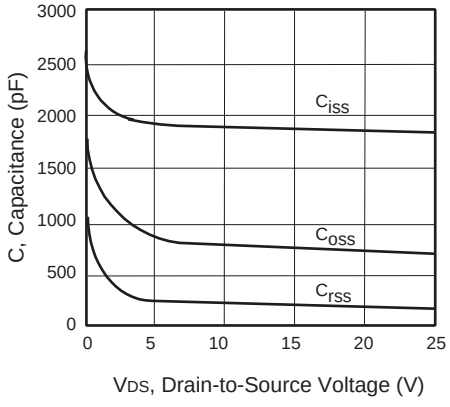

Figure 3. Capacitance

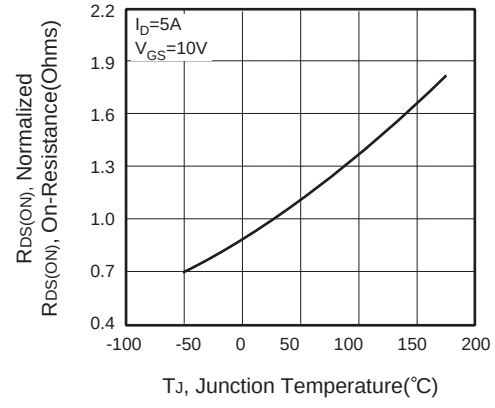

Figure 4. On-Resistance Variation with Temperature

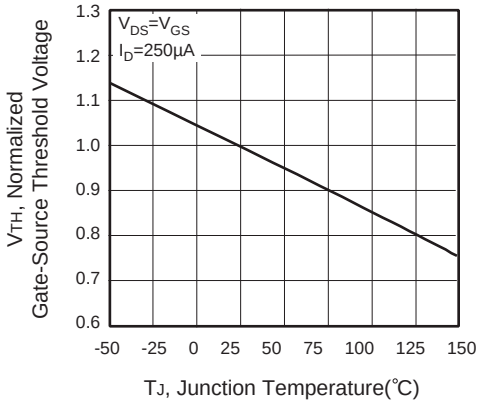

Figure 5. Gate Threshold Variation with Temperature

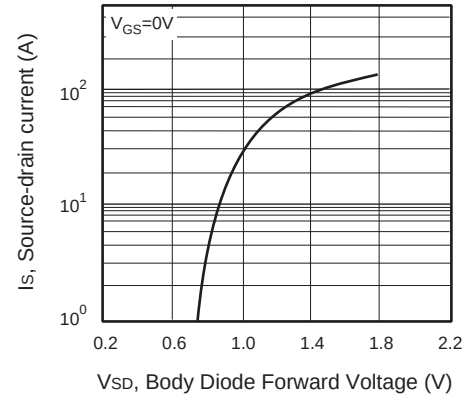

Figure 6. Body Diode Forward Voltage Variation with Source Current

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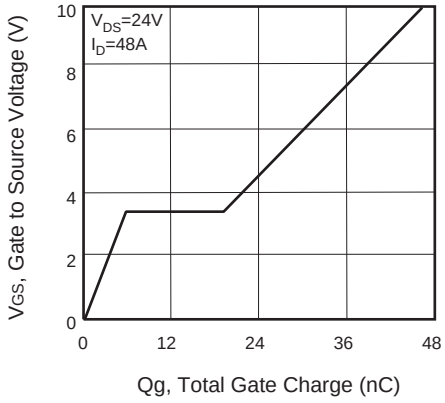

Figure 7. Gate Charge

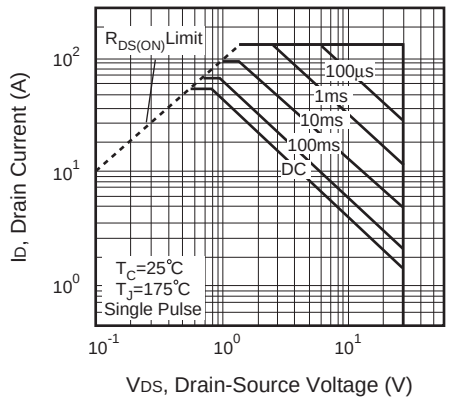

Figure 8. Maximum Safe Operating Area

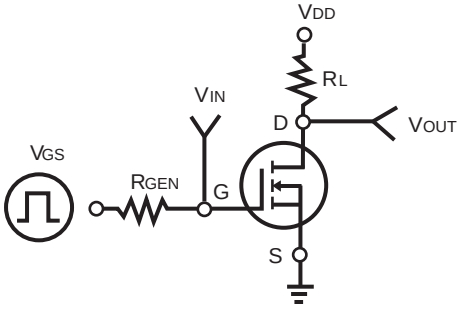

Figure 9. Switching Test Circuit

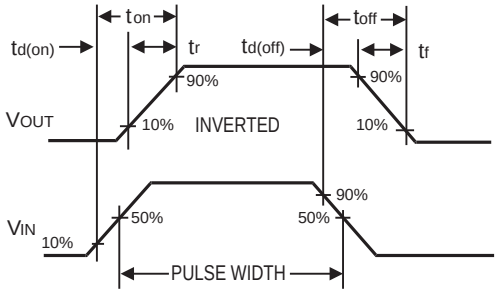

Figure 10. Switching Waveforms

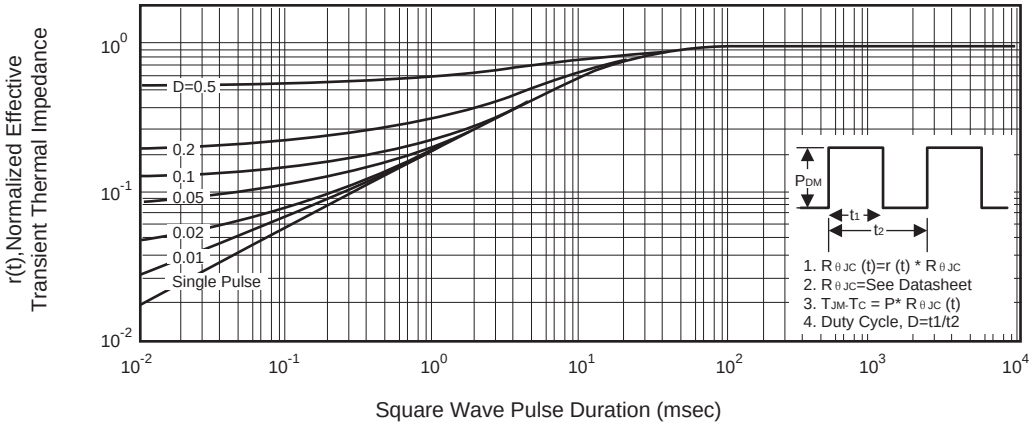

Figure 11. Normalized Thermal Transient Impedance Curve