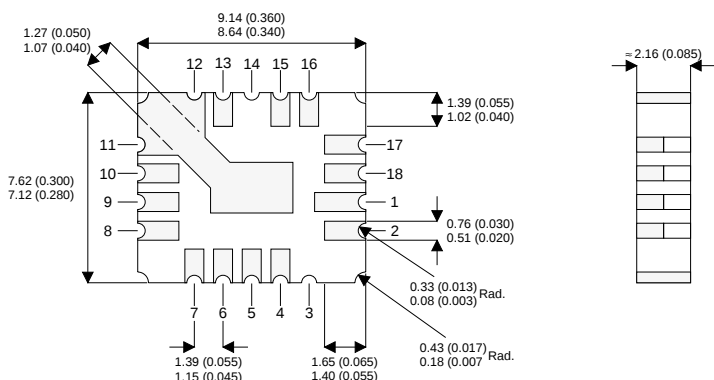


2N6782LCC4

MECHANICAL DATA

Dimensions in mm (inches)



LCC4

MOSFET	TRANSISTOR	PINS
GATE	BASE	4,5
DRAIN	COLLECTOR	1,2,15,16,17,18
SOURCE	EMITTER	6,7,8,9,10,11,12,13

N-CHANNEL POWER MOSFET

V_{DSS}	100V
$I_{D(cont)}$	3.1A
$R_{DS(on)}$	0.6 Ω

FEATURES

- SURFACE MOUNT
- SMALL FOOTPRINT
- HERMETICALLY SEALED
- DYNAMIC dv/dt RATING
- AVALANCHE ENERGY RATING
- SIMPLE DRIVE REQUIREMENTS
- LIGHTWEIGHT

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

V_{GS}	Gate – Source Voltage	$\pm 20V$
I_D	Continuous Drain Current ($V_{GS} = 10V$, $T_{case} = 25^{\circ}C$)	3.1A
I_D	Continuous Drain Current ($V_{GS} = 10V$, $T_{case} = 100^{\circ}C$)	2.0A
I_{DM}	Pulsed Drain Current ¹	12A
P_D	Power Dissipation @ $T_{case} = 25^{\circ}C$	11W
	Linear Derating Factor	0.09W/ $^{\circ}C$
E_{AS}	Single Pulse Avalanche Energy ²	68mJ
dv/dt	Peak Diode Recovery ³	5.5V/ns
T_J , T_{stg}	Operating and Storage Temperature Range	-55 to +150 $^{\circ}C$
	Surface Temperature (for 5 sec).	300 $^{\circ}C$

Notes

- 1) Pulse Test: Pulse Width $\leq 300\mu s$, $\delta \leq 2\%$
- 2) @ $V_{DD} = 50V$, $L \geq 570\mu H$, $R_G = 25\Omega$, Peak $I_L = 14A$, Starting $T_J = 25^{\circ}C$
- 3) @ $I_{SD} \leq 14A$, $di/dt \leq 140A/\mu s$, $V_{DD} \leq BV_{DSS}$, $T_J \leq 150^{\circ}C$, Suggested $R_G = 7.5\Omega$

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
STATIC ELECTRICAL RATINGS							
BV _{DSS}	Drain – Source Breakdown Voltage	V _{GS} = 0	I _D = 1mA	100			V
ΔBV _{DSS} ΔT _J	Temperature Coefficient of Breakdown Voltage	Reference to 25°C I _D = 1mA			0.10		V/°C
R _{DS(on)}	Static Drain – Source On–State Resistance ¹	V _{GS} = 10V	I _D = 2A			0.6	Ω
		V _{GS} = 10V	I _D = 3.1A			0.69	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS}	I _D = 250mA	2		4	V
g _{fs}	Forward Transconductance ¹	V _{DS} ≥ 15V	I _{DS} = 2A	0.8			S (V)
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} = 0	V _{DS} = 0.8BV _{DSS}			25	μA
			T _J = 125°C			250	
I _{GSS}	Forward Gate – Source Leakage	V _{GS} = 20V				100	nA
I _{GSS}	Reverse Gate – Source Leakage	V _{GS} = –20V				–100	
DYNAMIC CHARACTERISTICS							
C _{iss}	Input Capacitance	V _{GS} = 0			180		pF
C _{oss}	Output Capacitance	V _{DS} = 25V			82		
C _{rss}	Reverse Transfer Capacitance	f = 1MHz			15		
Q _g	Total Gate Charge	V _{GS} = 10V		4.1		6.5	nC
Q _{gs}	Gate – Source Charge	I _D = 3.1A		0.4		1.6	
Q _{gd}	Gate – Drain (“Miller”) Charge	V _{DS} = 0.5BV _{DSS}		1.4		3.5	
t _{d(on)}	Turn–On Delay Time	V _{DD} = 50V				15	ns
t _r	Rise Time	I _D = 3.1A				25	
t _{d(off)}	Turn–Off Delay Time	R _G = 7.5Ω				25	
t _f	Fall Time					20	
SOURCE – DRAIN DIODE CHARACTERISTICS							
I _S	Continuous Source Current					3.1	A
I _{SM}	Pulse Source Current ²					12	
V _{SD}	Diode Forward Voltage ¹	I _S = 3.1A	T _J = 25°C			1.5	V
		V _{GS} = 0					
t _{rr}	Reverse Recovery Time	I _F = 7.4A	T _J = 25°C			180	ns
Q _{rr}	Reverse Recovery Charge ¹	d _i / d _t ≤ 100A/μs V _{DD} ≤ 50V				2.0	μC
t _{on}	Forward Turn–On Time			Negligible			
THERMAL CHARACTERISTICS							
R _{θJC}	Thermal Resistance Junction – Case					11	°C/W
R _{θJPC}	Thermal Resistance Junction – PC Board					27	

Notes

- 1) Pulse Test: Pulse Width $\leq 300\text{ms}$, $\delta \leq 2\%$
- 2) Repetitive Rating – Pulse width limited by maximum junction temperature.

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