

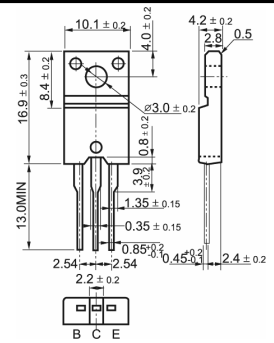
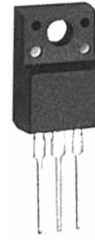


2SD1409

SILICON NPN DARLINGTON TRANSISTOR

GENERAL DESCRIPTION

Darlington transistor are designed for use as general purpose amplifiers, switching and motor control applications.



TO-220F

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V_{CESM}	Collector-emitter voltage peak value	$V_{BE} = 0V$	-	600	V
V_{CEO}	Collector-emitter voltage (open base)		-	400	V
I_C	Collector current (DC)		-	6	A
I_{CM}	Collector current peak value		-	12	A
P_{tot}	Total power dissipation	$T_{mb} \leq 25^\circ C$	-	25	W
V_{CEsat}	Collector-emitter saturation voltage	$I_C = 4.0A; I_B = 0.04A$	-	2.0	V
I_{csat}	Collector saturation current	$f=16KHZ$			A
V_F	Diode forward voltage	$I_F=3A$	2.5	5	V
t_f	Fall time	$I_C=4.0A, I_{B1}=-I_{B2}=0.04A, V_{CC}=100V$		6.0	μs

LIMITING VALUES

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V_{CESM}	Collector-emitter voltage peak value	$V_{BE} = 0V$	-	600	V
V_{CEO}	Collector-emitter voltage (open base)		-	400	V
I_C	Collector current (DC)		-	6	A
I_{CM}	Collector current peak value		-	12	A
I_B	Base current (DC)		-	1	A
I_{BM}	Base current peak value		-	2	A
P_{tot}	Total power dissipation	$T_{mb} \leq 25^\circ C$	-	25	W
T_{sto}	Storage temperature		-55	150	$^\circ C$
T_j	Junction temperature		-	150	$^\circ C$

ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
I_{CE}	Collector cut-off current	$V_{EB}=0V, V_{CE}=V_{CESMmax}$		0.5	mA
I_{CES}		$V_{EB}=0V, V_{CE}=V_{CESMmax}$		3.0	mA
$V_{CEO_{sust}}$	Collector-emitter sustaining voltage	$T_j=125^\circ C$ $I_B=0A, I_C=100mA$ $L=25mH$			V
V_{CEsat}	Collector-emitter saturation voltages	$I_C = 4.0A; I_B = 0.04A$		2.0	V
V_{BEsat}	Base-emitter saturation voltage	$I_C = 4.0A; I_B = 0.04A$		1.5	V
h_{FE}	DC current gain	$I_C = 2A; V_{CE} = 5V$	600		
V_F	Diode forward voltage	$I_F=3A$	2.5	5.0	V
f_T	Transition frequency at $f = 1MHz$	$I_C=2A, V_{CE}=10V$	5		MHZ
C_c	Collector capacitance at $f = 1MHz$	$V_{CB} = 50V$		50	pF
t_s	Switching times(16KHz line deflecton circuit)	$I_C=4.0A, I_{B1}=-I_{B2}=0.04A, V_{CC}=100V$		10	μs
t_f	Turn-off storage time Turn-off fall time	$I_C=4.0A, I_{B1}=-I_{B2}=0.04A, V_{CC}=100V$		6.0	μs